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ABSTRACT

This study guide is designed to help teachers understand the role assessment plays in helping students learn and to help teachers improve their own assessment capacities. The guide contains assigned readings, discussion questions, activities, checks for understanding, and reflections for learners using the "Classroom Assessment: Linking Instruction and Assessment" manual. Chapters in the study guide are: (1) "Classroom Assessment and Instruction"; (2) "Clarifying Learning Targets"; (3) "Using Multiple Assessment Strategies"; (4) "Making Decisions and Taking Action"; and (5) "Documenting and Communicating." In order to complete the study guide, one will need the manual and access to the video provided for each school. The study guide assumes that users will have participated in a three-hour overview provided by the school administration. (SLD)

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STUDY GUIDE

FOR

CLASSROOM ASSESSMENT: LINKING INSTRUCTION AND ASSESSMENT

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About this Study Guide

This study guide is a companion to the manual *Classroom Assessment: Linking Instruction and Assessment*, published by the North Carolina Department of Public Instruction, January 1999. In order to complete this study guide, you will need that manual and access to the video that has been provided for each school. It is also recommended that you find a colleague or a small group with whom to work, although you may complete the study guide independently. This study guide assumes that you have participated in a three-hour overview provided by your school administration.

Some of the benefits for choosing to work through this study guide include:

- You will gain a higher level of awareness of the role assessment plays in helping students learn.

- You will improve your own assessment capacity by building greater assessment literacy and by increasing your professional knowledge about how assessment is currently viewed.

- If your principal or central office administration provides a three-hour overview and establishes renewal credit for this study guide, you can receive 2.5 renewal credits for the 25 contact hours involved in completing the work in this study guide.

- You can include the work in this study guide as a way to meet the goals you set in your school improvement plan or your professional development plan.

A special thanks to Nancy McMunn, consultant with SERVE, who collaborated with Jeane Joyner and Jan Williamson in producing this document and to Dee Brewer, Carolyn Cobb, Jane Cowan, Julie Malone, Sherron Pfeiffer, and Rhonda Welfare for reviewing this document.

If you have questions or comments about the classroom assessment manual or this study guide, please contact Jeane Joyner in Accountability Services (phone: 919-715-1864 or email jjoyner@dpi.state.nc.us) or Jan Williamson in Instructional Services (phone: 919-715-1875 or email jwilliamson@dpi.state.nc.us).

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Before You Begin this Study Guide

In this study guide you will be responsible for completing the following:

Assigned Readings: (Each individual completes)

- ❑ Complete the assigned readings for each section of this guide. The readings will be found in the manual *Classroom Assessment: Linking Instruction and Assessment* or the specific article will be provided.

Questions for discussion and reflection: (Complete with a peer or team)

- ❑ This section provides you with insightful questions that will help begin dialogue on specific assessment issues pertinent to the section of the manual. You are encouraged to form peer teams or dialogue groups at your school to sit and share/discuss your responses and thoughts about these issues before you proceed to other activities.

Activities: (Can be completed individually or in a team)

- ❑ You will be given several activities in this part; some will be required and others are optional.

Checks for understanding: (Each individual completes)

- ❑ This section provides you with an opportunity to assess your understanding of the information in this module. You are asked to complete this part by responding to the assessment included in each section and reviewing any information you do not fully understand.

Reflections on what was learned: (Each individual completes)

- ❑ This section asks you to reflect on what you have learned in reference to the goals of the study guide. When you have completed the work in the entire study guide, you will be asked to respond in writing to some of these questions.

The Role of Assessment in Teaching and Learning

Overview

Goals:

The focus of this chapter is to review the information you were presented in the introductory workshop for this assessment module. As you work through this chapter you will:

1. Reflect on the chapter and dialogue with your peers to understand that assessment goes beyond state and local testing.
2. Begin the process of building assessment literacy and assessment capacity for taking action based on your own reflections.

Estimated time for this module: **3 hours**

Assigned readings:

Overview chapter in the manual: pages 1-18

Questions for discussion and reflection:

- When you are learning something new what helps you learn it?
- What do you think "teaching to the test" means to you or your peers?
- What are the assessment principles that guide you in the classroom?
- What previous training have you receive in assessment?
- If someone asked you to explain what "quality" assessment means, what would you tell him or her?

Required activities:

- Activity 1 - Principles for Quality Classroom Assessment
- Activity 2 - Video Segment—Watch "Beyond Testing"

Optional activities (Choose one):

- Activity 3 - Shifts in Assessment Practices
- Activity 4 - Environments that Promote Learning

Checking for understanding:

Complete the true/false quiz.

Reflecting on what was learned:

1. How do the needs of assessment information vary for the state, district, school, teacher, parent, and student?

2. What questions or insights do I now have about assessment that I have not previously thought about?

Complete this checklist when you have finished this module:

_____ Read pp. 1-18 in the manual

_____ Discussed "Questions for discussion and reflection"

_____ Completed Activity 1 - "Principles of Quality Classroom Assessment"

_____ Completed Activity 2 - video segment "Beyond Testing"

_____ Completed one activity of my choice

_____ Completed "Checking for understanding"

_____ Reflected on what was learned

Key for Checking for Understanding (page 11 in this study guide):

1. False see page 2 of *Classroom Assessment: Linking Instruction and Assessment*
2. True see page 3 of *Classroom Assessment: Linking Instruction and Assessment*
3. True see page 7 of *Classroom Assessment: Linking Instruction and Assessment*
4. True see page 8 of *Classroom Assessment: Linking Instruction and Assessment*
5. False see page 8 of *Classroom Assessment: Linking Instruction and Assessment*
6. True see page 11 of *Classroom Assessment: Linking Instruction and Assessment*
7. False see page 13 of *Classroom Assessment: Linking Instruction and Assessment*
8. False see page 13 of *Classroom Assessment: Linking Instruction and Assessment*
9. True see page 14 of *Classroom Assessment: Linking Instruction and Assessment*
10. False see page 17 of *Classroom Assessment: Linking Instruction and Assessment*

ACTIVITY 1

PRINCIPLES FOR QUALITY CLASSROOM ASSESSMENT

Directions:
Read each of the following principles (pp. 16-18) and respond to either *a* **or** *b*

a) What does this mean for you and your students in your classroom?

or

b) What questions do you need answered in order to understand what this assessment principle means?

Principle	Personal Response
Principle 1: Quality assessments arise from and accurately reflect clearly specified, appropriate, and essential learning targets.	
Principle 2: Quality assessments are specifically designed and focused to serve instructional purposes.	
Principle 3: Quality assessments accurately reflect the intended target and serve the intended purpose.	
Principle 4: Quality assessments promote equity by providing ample opportunities for students to demonstrate their learning.	
Principle 5: Quality assessments provide sufficient evidence of learning to permit confident conclusions (inferences) about student achievement.	
Principle 6: Quality assessments are designed, developed and used in ways that eliminate bias or distortion that may interfere with the accuracy of results.	

ACTIVITY 2

VIDEO SEGMENT: BEYOND TESTING

Directions:

Watch the fourth video, "Beyond Testing," on the Annenberg videotape that has been provided to each school. This is a portion of a series on classroom assessment that was produced by WGBH Television in Boston for the Annenberg/CPB Math and Science Project.

At the end of the manual of *Classroom Assessment: Linking Instruction and Assessment* in a special appendix, guide pages are provided for the Annenberg video series. The guide pages for "Beyond Testing" (pages 13-25) give an overview of this video and suggested questions for discussion.

ACTIVITY 3

Shifts in Assessment Practices

Directions:
(Read each statement as "I...," and check the box that indicates your classroom practice. For example, If "I assess a broad range of learning targets," I would check box 5. If "I assess mainly students' knowledge of specific facts and skills," then I would check box 1. If I believe that I fall somewhere in between the two practices, I would check box 4, 3 or 2.)

I.....	WHERE AM I					I .....
Assess a broad range of learning targets	5	4	3	2	1	Assess mainly students' knowledge of specific facts and skills
Compare students' performance with established criteria	5	4	3	2	1	Compare students' performance with that of other students
Create my own assessments and observations	5	4	3	2	1	Use only assessments that come with the manual/book
Make the assessment process public, participatory, and dynamic	5	4	3	2	1	Make the assessment process secret, exclusive, and fixed
Allow individual students to demonstrate their knowledge in different ways	5	4	3	2	1	Ask all students to demonstrate their knowledge in the same way
Involve students in creating assessments	5	4	3	2	1	Develop assessments by myself
Allow students to retake tests that they do poorly on	5	4	3	2	1	Give students a single opportunity to take a test
Treat most assessment as incorporated into instruction	5	4	3	2	1	Treat most assessment as separate from instruction
Base inferences on multiple sources of evidence	5	4	3	2	1	Base inferences on a few sources of evidence
View students as partners in the assessment process	5	4	3	2	1	View students as those we are responsible for evaluating
Regard assessment as a continual process	5	4	3	2	1	Regard assessment as primarily summative
Hold self, parents, and students as accountable for assessment results	5	4	3	2	1	Hold only students accountable for assessment results

Calculate your score:

1. A score ranging between 48 – 60 means that your assessment practices reflect the current shifts.
2. A score ranging between 24 – 48 means that your assessment practices represent a combination of the old and new beliefs.
3. A score ranging between 12 –24 means your assessment practices have not changed to reflect the current shifts in assessment.

So, what does this mean? This self-assessment should help guide you in knowing where on a continuum your assessment practices are. Developing a clearer understanding will help you reflect on "quality" assessment practices that will help students learn and take greater responsibility for their own learning.

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ACTIVITY 4

Scenarios: Environments that Promote Learning

Directions: Read the scenarios provided and respond to the questions at the end.

You are a parent moving to a community in North Carolina. You are very concerned about this move because your two children are both in middle school. They are anxious about moving and having to change schools mid year. Prior to your move, you decide to visit two schools in the area in which you want to live. These visits will help you decide on the best location for buying a new house based on the quality of the school. Here is what you observed during your visits.

Scenario One

FULCRUM MIDDLE SCHOOL (850 STUDENTS)

The principal greets you upon arrival at the school and immediately gives you a tour of the school. He points out to you what he feels are the important features of the school. He tells you about each feature as you walk through the building. Some of these special features are

- a huge technology laboratory with special technology teachers on staff prior to school hours, during school hours and after school hours,
- a library resource lab with Internet connections for 5 or more students at a time,
- a newly renovated area that allows for large groups of children to be outdoors at any given time,
- a renovated cafeteria that allows students four choices for meals,
- a new faculty lounge where teachers have several new copy machines, fax machines and telephone connections,
- bulletins boards in the halls next to each teacher room for displays,
- a huge dance and art studio for students, and
- a video recording room with all the latest technology. (No students or teachers were present and the principal told you he was in the process of hiring a part-time person to maintain the room.)

Once the tour is over the principal takes you to his office and asks you if you have any questions about his wonderful school. You think for a minute and ask how the school performs on statewide tests. The principal tells you that, based on end-of-grade tests, the school is in the top 20% statewide and everyone is working to improve this record. However, he says that this is not the most important issue for this school because the kids always do well on tests. The principal receives a call and tells you that if you think of other questions to call him later. He smiles and dismisses you in order to respond to the caller. You leave with no further questions.

SCENARIO TWO

CRISTAE MIDDLE SCHOOL (700 STUDENTS)

Two students greet you at the door of the school, announcing that they are your tour guides. They say that if you have any questions they cannot answer they will find someone who can. They have their tour and schedule planned out. You look around for adults and do not see any so you go with the students.

First stop: The Technology Lab

It is clean and neat but has some outdated computers. The students say they spend at least an hour twice a month in this lab to update their portfolios; they show you one of their electronic portfolios that houses the work they do in all their classes. You asked them what they liked about this process. They say their portfolios let them know what they are learning and what they need to improve.

Second stop: The P.E. Field

The students show you two areas. One area is a mile-long running track that the PE teachers use to help students work on their cardiovascular condition or that students use for walking. Another area is the football and soccer field that is used for exercise during the school day and for athletic games after school hours. Walking back inside, the students point out the patio area with benches and plants which the science club had planted.

Third Stop: The Cafeteria

The students warn you that it will be noisy since lunch has already begun. You notice teachers at several tables, sitting and talking to the students. The noise level is not as loud as you expect, and you notice that students clean up their mess. Your tour guides tell you about a student in-house committee at the school to help maintain a clean and safe environment. This group sets the rules for cafeteria behavior and also decides on any punishments.

Fourth Stop: The Faculty Lounge

The tour guides explain that this area is off-limits to students. When you look inside you see teacher mail boxes, a message center, and several computers hooked to the Internet here. There is only one old copy machine and one fax. The students say that there are telephones in every classroom.

Fifth Stop: Several classrooms

Your guides choose several classrooms to visit. Each teacher greets you and continues with the lesson. You are able to view several more student portfolios and ask the students questions. You spend a long time in the classrooms. When you ask one teacher about student performance on state and district tests, she shows you an action plan that teachers used to set goals to work toward improvement. She explains that this school was once ranked as low performing by the state but has made exemplary growth in the last few years.

Last Stop: The Principal's Office

The assistant principal gives you a packet of information about the school and goes over the contents. He asks if you have any further questions.

WHAT TYPES OF ENVIRONMENTS FOR LEARNING ARE REPRESENTED?

Based on the information you collected during your visits, which school would you chose for your children? Why?

If you could revisit either school, what else would you ask or like to see?

Checking for Understanding

Selected Response Test for Overview

(Please respond to questions for a self-check of your understanding of the content in this overview. This self-assessment models a selected response format. Look up information to clarify your understanding. An answer key is on page 4. The important thing is not your score, but the information you gained and how this information affects your assessment practices.)

True	False	Question
		1. Assessment literacy does not include knowing how to use assessment to motivate and teach students.
		2. The purpose of the assessment guides the types of information that needs to be gathered.
		3. No single type of assessment can meet all of the purposes of assessment or information needs of the various educational decision-makers.
		4. There are many other ways to communicate student achievement besides using numbers.
		5. The key assessment users are teachers.
		6. Assessment methods should match the learning targets.
		7. When making promotion/retention decisions, state test information is all the evidence for student performance that is needed.
		8. The kinds of inferences about student learning do not differ across methods of assessment.
		9. The "Model for Teaching and Learning," representing the assessment cycle is applicable for state, school, and classroom level decisions about assessment.
		10. Bias and distortion are not important when designing, developing and using assessments.

Classroom Assessment and Instruction

Chapter One

Goals:

The focus of this section is to gain understanding of assessment as a process. As you finish this section you will:

1. Reflect on a model for teaching and learning that involves an understanding of the assessment cycle.
2. Gain an understanding of the major components involved in the assessment process (feedback, purpose, targets, methods, uses, actions).
3. Understand how changing assessments practices can impact student achievement.

Estimated time for this section: 2 hours

Assigned readings:

Chapter 1 in the manual, "Classroom Assessment and Instruction," pages 19-34

Questions for discussion and reflection:

1. How does thinking of assessment as a process help teachers meet the needs of individual students within the context of the class as a whole?
2. If you had to describe what classroom assessment should reflect to a new teacher or a parent – what would that vision be?
3. How can thinking of assessment as a process for providing feedback positively impact student achievement?
4. How is assessment as a process different from assessment as an event that teachers do at the end of instruction?
5. Think of an instructional unit taught in your classroom that describes the instruction and assessment cycle noted on page 19 of the manual. How would the process be applied in your classroom? What problems or concerns do you have with this process?

Required activity:

- Activity 1- Read the article "Inside the Black Box" that follows page 13 of this study guide and answer the accompanying question.

Checking for understanding:

Part I: Fill in the blank graphic for the assessment cycle.
Part II: Define the terms used to relate assessment as a process.

Reflecting on what has been learned:

1. How does thinking of assessment as an on-going process in the classroom support and enhance state testing?

2. Give examples to illustrate how assessment as a process relates to different purposes for assessment.

Complete this checklist when you have finished this module:

_____ Read pp. 19-34 in the manual

_____ Completed Activity 1 – "Inside the Black Box"

_____ Discussed "Questions for discussion and reflection"

_____ Completed "Checking for Understanding"

_____ Reflected on what was learned

ACTIVITY 1

INSIDE THE BLACK BOX

Directions:

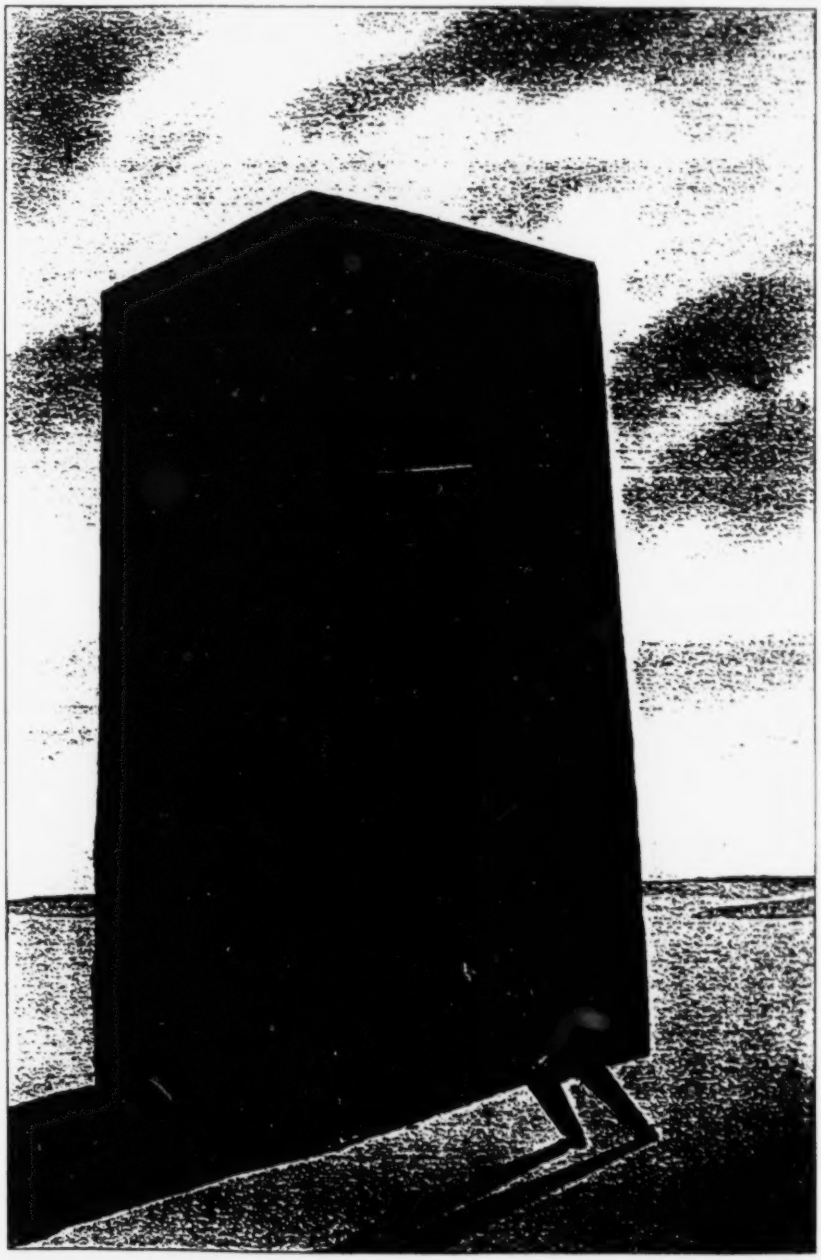
Read the article "Inside the Black Box," reprinted with permission from *Phi Delta Kappan*, October 1998. Respond to the following question:

In what ways does this article reinforce or extend your personal observations of how on-going classroom assessment fosters student achievement?

Inside the Black Box

Raising Standards Through Classroom Assessment

BY PAUL BLACK AND
DYLAN WILIAM



Firm evidence shows that formative assessment is an essential component of classroom work and that its development can raise standards of achievement, Mr. Black and Mr. Wiliam point out. Indeed, they know of no other way of raising standards for which such a strong prima facie case can be made.

RAISING the standards of learning that are achieved through schooling is an important national priority. In recent years, governments throughout the world have been more and more vigorous in making changes in pursuit of this aim. National, state, and district standards; target setting; enhanced programs for the external testing of students' performance; surveys such as NAEP (National Assessment of Educational Progress) and TIMSS (Third International Mathematics and Science Study); initiatives to improve school plan-

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ning and management; and more frequent and thorough inspection are all means toward the same end. But the sum of all these reforms has not added up to an effective policy because something is missing.

Learning is driven by what teachers and pupils do in classrooms. Teachers have to manage complicated and demanding situations, channeling the personal, emotional, and social pressures of a group of 30 or more youngsters in order to help them learn immediately and become better learners in the future. Standards can be raised only if teachers can tackle this task more effectively. What is missing from the efforts alluded to above is any direct help with this task. This fact was recognized in the TIMSS video study: "A focus on standards and accountability that ignores the processes of teaching and learning in classrooms will not provide the direction that teachers need in their quest to improve."[1]

In terms of systems engineering, present policies in the U.S. and in many other countries seem to treat the classroom as a black box. Certain *inputs* from the outside — pupils, teachers, other resources, management rules and requirements, parental anxieties, standards, tests with high stakes, and so on — are fed into the box. Some *outputs* are supposed to follow: pupils who are more knowledgeable and competent, better test results, teachers who are reasonably satisfied, and so on. But what is happening inside the box? How can anyone be sure that a particular set of new inputs will produce better outputs if we don't at least study what happens inside? And why is it that most of the reform initiatives mentioned in the first paragraph are not aimed at giving direct help and support to the work of teachers in classrooms?

The answer usually given is that it is up to teachers: they have to make the inside work better. This answer is not good enough, for two reasons. First, it is at least possible that some changes in the inputs may be counterproductive and make it harder for teachers to raise standards. Second, it seems strange, even unfair, to leave the most difficult piece of the standards-raising puzzle entirely to teachers. If there are ways in which policy makers and others can give direct help and support to the everyday classroom task of achieving better learning, then surely these ways ought to be pursued vigorously.

This article is about the inside of the black box. We focus on one aspect of teaching: formative assessment. But we will show that this feature is at the heart of effective teaching.

The Argument

We start from the self-evident proposition that teaching and learning must be interactive. Teachers need to know about their pupils' progress and difficulties with learning so that they can adapt their own work to meet pupils' needs — needs that are often unpredictable and that vary from one pupil to another. Teachers can find out what they need to know in a variety of ways, including observation and discussion in the classroom and the reading of pupils' written work.

We use the general term *assessment* to refer to all those activities undertaken by teachers — and by their students in assessing themselves — that provide information to be used as feedback to modify teaching and learning activities. Such assessment becomes *formative assessment* when the evidence is actually used to adapt the teaching to meet student needs.[2]

There is nothing new about any of this. All teachers make assessments in every class they teach. But there are three important questions about this process that we seek to answer:

- Is there evidence that improving formative assessment raises standards?
- Is there evidence that there is room for improvement?
- Is there evidence about how to improve formative assessment?

In setting out to answer these questions, we have conducted an extensive survey of the research literature. We have checked through many books and through the past nine years' worth of issues of more than 160 journals, and we have studied earlier reviews of research. This process yielded about 580 articles or chapters to study. We prepared a lengthy review, using material from 250 of these sources, that has been published in a special issue of the journal *Assessment in Education*, together with comments on our work by leading educational experts from Australia, Switzerland, Hong Kong, Lesotho, and the U.S.[3]

The conclusion we have reached from our research review is that the answer to each of the three questions above is clearly yes. In the three main sections below, we outline the nature and force of the evidence that justifies this conclusion. However, because we are presenting a summary here, our text will appear strong on assertions and weak on the details of the justification. We maintain that these assertions are backed by evidence and that this backing is set out in full detail in the lengthy review on which this article is founded.

We believe that the three sections below establish a strong case that *governments, their agencies, school authorities, and the teaching profession should study very carefully whether they are seriously interested in raising standards in education.* However, we also acknowledge widespread evidence that fundamental change in education can be achieved only slowly — through programs of professional development that build on existing good practice. Thus we do not conclude that formative assessment is yet another "magic bullet" for education. The issues involved are too complex and too closely linked to both the difficulties of classroom practice and the beliefs that drive public policy. In a final section, we confront this complexity and try to sketch out a strategy for acting on our evidence.

Does Improving Formative Assessment Raise Standards?

A research review published in 1986, concentrating primarily on classroom assessment work for children with mild handicaps, surveyed a large number of innovations, from which 23 were selected.[4] Those chosen satisfied the condition that quantitative evidence of learning gains was obtained, both for those involved in the innovation and for a similar group not so involved. Since then, many more papers have been published describing similarly careful quantitative experiments. Our own review has selected at least 20 more studies. (The number depends on how rigorous a set of selection criteria are applied.) All these studies show that innovations that include strengthening the practice of formative assessment produce significant and often substantial learning gains. These studies range over age groups from 5-year-olds to university undergraduates, across several school subjects, and over several countries.

For research purposes, learning gains of this type are measured by comparing the average improvements in the test scores of pupils involved in an innovation with the range of scores that are found for typical groups of pupils on these same tests.

The ratio of the former divided by the latter is known as the *effect size*. Typical effect sizes of the formative assessment experiments were between 0.4 and 0.7. These effect sizes are larger than most of those found for educational interventions. The following examples illustrate some practical consequences of such large gains.

• An effect size of 0.4 would mean that the average pupil involved in an innovation would record the same achievement as a pupil in the top 35% of those not so involved.

• An effect size gain of 0.7 in the recent international comparative studies in mathematics[3] would have raised the score of a nation in the middle of the pack of 41 countries (e.g., the U.S.) to one of the top five.

Many of these studies arrive at another important conclusion: that improved formative assessment helps low achievers more than other students and so reduces the range of achievement while raising achievement overall. A notable recent example is a study devoted entirely to low-achieving students and students with learning disabilities, which shows that frequent assessment feedback helps both groups enhance their learning.[6] Any gains for such pupils could be particularly important. Furthermore, pupils who come to see themselves as unable to learn usually cease to take school seriously. Many become disruptive; others resort to truancy. Such young people are likely to be alienated from society and to become the sources and the victims of serious social problems.

Thus it seems clear that very significant learning gains lie within our grasp. The fact that such gains have been achieved by a variety of methods that have, as a common feature, enhanced formative assessment suggests that this feature accounts, at least in part, for the successes. However, it does not follow that it would be an easy matter to achieve such gains on a wide scale in normal classrooms. Many of the reports we have studied raise a number of other issues.

• All such work involves new ways to enhance feedback between those taught and the teacher, ways that will require significant changes in classroom practice.

• Underlying the various approaches are assumptions about what makes for effective learning — in particular the assumption that students have to be actively involved.

• For assessment to function formatively, the results have to be used to adjust teaching and learning; thus a significant aspect of any program will be the ways in which teachers make these adjustments.

• The ways in which assessment can affect the motivation and self-esteem of pupils and the benefits of engaging pupils in self-assessment deserve careful attention.

"The food's really not half bad, but the atmosphere leaves a lot to be desired."

Is There Room for Improvement?

A poverty of practice. There is a wealth of research evidence that the everyday practice of assessment in classrooms is beset with problems and shortcomings, as the following selected quotations indicate.

• "Marking is usually conscientious but often fails to offer guidance on how work can be improved. In a significant minority of cases, marking reinforces underachievement and underexpectation by being too generous or unfocused. Information about pupil performance received by the teacher is insufficiently used to inform subsequent work," according to a United Kingdom inspection report on secondary schools.[7]

• "Why is the extent and nature of formative assessment in science so impoverished?" asked a research study on secondary science teachers in the United Kingdom.[8]

• "Indeed they pay lip service to [formative assessment] but consider that its practice is unrealistic in the present educational context," reported a study of Canadian secondary teachers.[9]

• "The assessment practices outlined above are not common, even though these kinds of approaches are now widely promoted in the professional literature," according to a review of assessment practices in U.S. schools.[10]

The most important difficulties with assessment revolve around three issues. The first issue is *effective learning*.

• The tests used by teachers encourage rote and superficial learning even when teachers say they want to develop understanding; many teachers seem unaware of the inconsistency.

• The questions and other methods teachers use are not shared with other teachers in the same school, and they are not critically reviewed in relation to what they actually assess.

• For primary teachers particularly, there is a tendency to emphasize quantity and presentation of work and to neglect its

The ultimate user of assessment information that is elicited in order to improve learning is the pupil.

quality in relation to learning.

The second issue is *negative impact*.

- The giving of marks and the grading function are overemphasized, while the giving of useful advice and the learning function are underemphasized.
- Approaches are used in which pupils are compared with one another, the prime purpose of which seems to them to be competition rather than personal improvement; in consequence, assessment feedback teaches low-achieving pupils that they lack "ability," causing them to come to believe that they are not able to learn.

The third issue is the *managerial role* of assessments.

- Teachers' feedback to pupils seems to serve social and managerial functions, often at the expense of the learning function.
- Teachers are often able to predict pupils' results on external tests because their own tests imitate them, but at the same time teachers know too little about their pupils' learning needs.
- The collection of marks to fill in records is given higher priority than the analysis of pupils' work to discern learning needs; furthermore, some teachers pay no attention to the assessment records of their pupils' previous teachers.

Of course, not all these descriptions apply to all classrooms. Indeed, there are many schools and classrooms to which they do not apply at all. Nevertheless, these general conclusions have been drawn by researchers who have collected evidence — through observation, interviews, and questionnaires — from schools in several countries, including the U.S.

An empty commitment. The development of national assessment policy in England and Wales over the last decade illustrates the obstacles that stand in the way of developing policy support for formative assessment. The recommendations of a government task force in 1988[11] and all subsequent statements of government policy have emphasized the importance of formative assessment by teachers. However, the body charged with carrying out government policy on assessment had no strategy either to study or to develop the formative assessment of teachers and did no more than devote a tiny fraction of its resources to such work.[12] Most of the available resources and most of the public and political attention were focused on national external tests. While teachers' contributions to these "summative assessments" have been given some formal status, hardly any attention has been paid to their contributions through formative assessment. Moreover, the problems of the relationship between teachers' formative and summative roles have received no attention.

It is possible that many of the commitments were stated in the belief that formative assessment was not problematic, that it already happened all the time and needed no more than formal acknowledgment of its existence. However, it is also clear that the political commitment to external testing in order to promote competition had a central priority, while the commitment to formative assessment was marginal. As researchers the world over have found, high-stakes external tests always dominate teaching and assessment. However, they give teachers poor models for formative assessment because of their limited function of providing overall summaries of achievement rather than helpful diagnosis. Given this fact, it is hardly surprising that numerous research studies of the implementation of the education reforms in the United Kingdom have found that formative assessment is "seriously in need of development."[13] With hindsight, we can see that the failure to perceive the need for substantial support for formative assessment and to take responsibility for developing such support was a serious error.

In the U.S. similar pressures have been felt from political movements characterized by a distrust of teachers and a belief that external testing will, on its own, improve learning. Such fractured relationships between policy makers and the teaching profession are not inevitable — indeed, many countries with enviable educational achievements seem to manage well with policies that show greater respect and support for teachers. While the situation in the U.S. is far more diverse than that in England and Wales, the effects of high-stakes state-mandated testing are very similar to those of the external tests in the United Kingdom. Moreover, the traditional reliance on multiple-choice testing in the U.S. — not shared in the United Kingdom — has exacerbated the negative effects of such policies on the quality of classroom learning.

How Can We Improve Formative Assessment?

The self-esteem of pupils. A report of schools in Switzerland states that "a number of pupils . . . are content to 'get by.' . . . Every teacher who wants to practice formative assessment must reconstruct the teaching contracts so as to counteract the habits acquired by his pupils."[14]

The ultimate user of assessment information that is elicited in order to improve learning is the pupil. There are negative and positive aspects of this fact. The negative aspect is illustrated by the preceding quotation. When the classroom culture focuses on rewards, "gold stars," grades, or class ranking, then pupils look for ways to obtain the best marks rather than to improve their learning. One reported consequence is that, when they have any choice, pupils avoid difficult tasks. They also spend time and energy looking for clues to the "right answer." Indeed, many become reluctant to ask questions out of a fear of failure. Pupils who encounter difficulties are led to believe that they lack ability, and this belief leads them to attribute their difficulties to a defect in themselves about which they cannot do a great deal. Thus they avoid investing effort in learning that can lead only to disappointment, and they try to build up their self-esteem in other ways.

The positive aspect of students' being the primary users of the information gleaned from formative assessments is that negative outcomes — such as an obsessive focus on competition and the attendant fear of failure on the part of low achievers — are not inevitable. What is needed is a culture of success, backed by a belief that all pupils can achieve. In this regard, formative assessment can be a powerful weapon if it is communicated in the right way. While formative assessment can help all

pupils, it yields particularly good results with low achievers by concentrating on specific problems with their work and giving them a clear understanding of what is wrong and how to put it right. Pupils can accept and work with such messages, provided that they are not clouded by overtones about ability, competition, and comparison with others. In summary, the message can be stated as follows: *feedback to any pupil should be about the particular qualities of his or her work, with advice on what he or she can do to improve, and should avoid comparisons with other pupils.*

Self-assessment by pupils. Many successful innovations have developed self- and peer-assessment by pupils as ways of enhancing formative assessment, and such work has achieved some success with pupils from age 5 upward. This link of formative assessment to self-assessment is not an accident; indeed, it is inevitable.

To explain this last statement, we should first note that the main problem that those who are developing self-assessments encounter is not a problem of reliability and trustworthiness. Pupils are generally honest and reliable in assessing both themselves and one another; they can even be too hard on themselves. The main problem is that pupils can assess themselves only when they have a sufficiently clear picture of the targets that their learning is meant to attain. Surprisingly, and sadly, many pupils do not have such a picture, and they appear to have become accustomed to receiving classroom teaching as an arbitrary sequence of exercises with no overarching rationale. To overcome this pattern of passive reception requires hard and sustained work. When pupils do acquire such an overview, they then become more committed and more effective as learners. Moreover, their own assessments become an object of discussion with their teachers and with one another, and this discussion further promotes the reflection on one's own thinking that is essential to good learning.

Thus self-assessment by pupils, far from being a luxury, is in fact *an essential component of formative assessment.* When anyone is trying to learn, feedback about the effort has three elements: recognition of the *desired goal*, evidence about *present position*, and some understanding of a *way to close the gap* between the two.[5] All three must be understood to some degree by anyone before he or she can take action to improve learning.

Such an argument is consistent with more general ideas established by research into the way people learn. New understandings are not simply swallowed and stored in isolation; they have to be assimilated in relation to preexisting ideas. The new and the old may be inconsistent or even in conflict, and the disparities must be resolved by thoughtful actions on the part of the learner. Realizing that there are new goals for the learning is an essential part of this process of assimilation. Thus we conclude: *if formative assessment is to be productive, pupils should be trained in self-assessment so that they can understand the main purposes of their learning and thereby grasp what they need to do to achieve.*

Dialogue with the teacher provides the opportunity for the teacher to respond to and reorient a pupil's thinking.

The evolution of effective teaching. The research studies referred to above show very clearly that effective programs of formative assessment involve far more than the addition of a few observations and tests to an existing program. They require careful scrutiny of all the main components of a teaching plan. Indeed, it is clear that instruction and formative assessment are indivisible.

To begin at the beginning, the choice of tasks for classroom work and homework is important. Tasks have to be justified in terms of the learning aims that they serve, and they can work well only if opportunities for pupils to communicate their evolving understanding are built into the planning. Discussion, observation of activities, and marking of written work can all be used to provide those opportunities, but it is then important to look at or listen carefully to the talk, the writing, and the actions through which pupils develop and display the state of their understanding. Thus we maintain that *opportunities for pupils to express their understanding should be designed into any piece of teaching, for this will initiate the interaction through which formative assessment aids learning.*

Discussions in which pupils are led to talk about their understanding in their own ways are important aids to increasing knowledge and improving understanding. Dialogue with the teacher provides the opportunity for the teacher to respond to and reorient a pupil's thinking. However, there are clearly recorded examples of such discussions in which teachers have, quite unconsciously, responded in ways that would inhibit the future learning of a pupil. What the examples have in common is that the teacher is looking for a particular response and lacks the flexibility or the confidence to deal with the unexpected. So the teacher tries to direct the pupil toward giving the expected answer. In manipulating the dialogue in this way, the teacher seals off any unusual, often thoughtful but unorthodox, attempts by pupils to work out their own answers. Over time the pupils get the message: they are not required to think out their own answers. The object of the exercise is to work out — or guess — what answer the teacher expects to see or hear.

A particular feature of the talk between teacher and pupils is the asking of questions by the teacher. This natural and direct way of checking on learning is often unproductive. One common problem is that, following a question, teachers do not wait long enough to allow pupils to think out their answers. When a teacher answers his or her own question after only two or three seconds and when a minute of silence is not tolerable, there is no possibility that a pupil can think out what to say.

There are then two consequences. One is that, because the only questions that can produce answers in such a short time are questions of fact, these predominate. The other is that pupils don't even try to think out a response. Because they know that the answer, followed by another question, will come along in a few seconds, there is no point in trying. It is also generally the case that only a few pupils in a class answer the teacher's questions. The rest then leave it to these few, knowing that they cannot respond as quickly and being unwilling to risk making mistakes in public. So the teacher, by lowering the level

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Tests given in class and tests and other exercises assigned for homework are also important means of promoting feedback.

of questions and by accepting answers from a few, can keep the lesson going but is actually out of touch with the understanding of most of the class. The question/answer dialogue becomes a ritual, one in which thoughtful involvement suffers.

There are several ways to break this particular cycle. They involve giving pupils time to respond; asking them to discuss their thinking in pairs or in small groups, so that a respondent is speaking on behalf of others; giving pupils a choice between different possible answers and asking them to vote on the options; asking all of them to write down an answer and then reading out a selected few; and so on. What is essential is that any dialogue should evoke thoughtful reflection in which all pupils can be encouraged to take part; for only then can the formative process start to work. In short, the dialogue between pupils and a teacher should be *thoughtful, reflective, focused to evoke and explore understanding, and conducted so that all pupils have an opportunity to think and to express their ideas.*

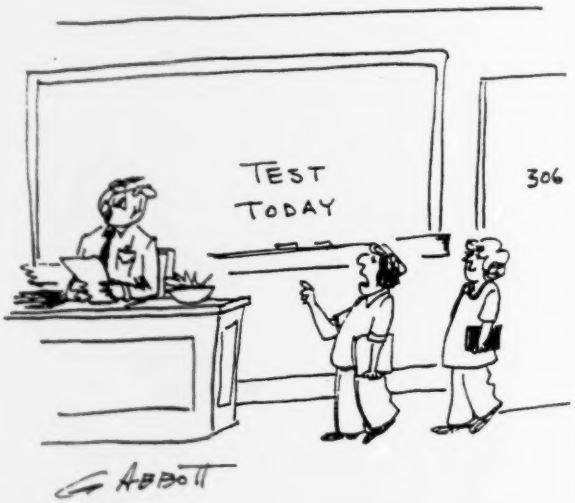
Tests given in class and tests and other exercises assigned for homework are also important means of promoting feedback. A good test can be an occasion for learning. It is better to have frequent short tests than infrequent long ones. Any new learning should first be tested within about a week of a first encounter, but more frequent tests are counterproductive. The quality of the test items — that is, their relevance to the main learning aims and their clear communication to the pupil — requires scrutiny as well. Good questions are hard to generate, and teachers should collaborate and draw on outside sources to collect such questions.

Given questions of good quality, it is essential to ensure the quality of the feedback. Research studies have shown that, if pupils are given only marks or grades, they do not benefit from the feedback. The worst scenario is one in which some pupils who get low marks this time also got low marks last time and come to expect to get low marks next time. This cycle of repeated failure becomes part of a shared belief between such students and their teacher. Feedback has been shown to improve learning when it gives each pupil specific guidance on strengths and weaknesses, preferably without any overall marks. Thus the way in which test results are reported to pupils so that they can identify their own strengths and weaknesses is critical. Pupils must be given the means and opportunities to work with evidence of their difficulties. For formative purposes, a test at the end of a unit or teaching module is pointless; it is too late to work with the results. We conclude that *the feedback on tests, seatwork, and homework should give each pupil guidance on how to improve, and each pupil must be given help and an opportunity to work on the improvement.*

All these points make clear that there is no one simple way to improve formative assessment. What is common to them is that a teacher's approach should start by being realistic and confronting the question "Do I really know enough about the understanding of my pupils to be able to help each of them?"

Much of the work teachers must do to make good use of formative assessment can give rise to difficulties. Some pupils will resist attempts to change accustomed routines, for any such change is uncomfortable, and emphasis on the challenge to think for yourself (and not just to work harder) can be threatening to many. Pupils cannot be expected to believe in the value of changes for their learning before they have experienced the benefits of such changes. Moreover, many of the initiatives that are needed take more class time, particularly when a central purpose is to change the outlook on learning and the working methods of pupils. Thus teachers have to take risks in the belief that such investment of time will yield rewards in the future, while "delivery" and "coverage" with poor understanding are pointless and can even be harmful.

Teachers must deal with two basic issues that are the source of many of the problems associated with changing to a system of formative assessment. The first is *the nature of each teacher's beliefs about learning.* If the teacher assumes that knowledge is to be transmitted and learned, th understanding will develop later, and th. clarity of exposition accompanied by rewards for patient reception are the essentials of good teaching, then formative assessment is hardly necessary. However, most teachers accept the wealth of evi-



"It has been said that a fool can ask more questions than a wise man can answer."

dence that this transmission model does not work, even when judged by its own criteria, and so are willing to make a commitment to teaching through interaction. Formative assessment is an essential component of such instruction. We do not mean to imply that individualized, one-on-one teaching is the only solution; rather we mean that what is needed is a classroom culture of questioning and deep thinking, in which pupils learn from shared discussions with teachers and peers. What emerges very clearly here is the indivisibility of instruction and formative assessment practices.

The other issue that can create problems for teachers who wish to adopt an interactive model of teaching and learning relates to *the beliefs teachers hold about the potential of all their pupils for learning*. To sharpen the contrast by overstating it, there is on the one hand the "fixed I.Q." view — a belief that each pupil has a fixed, inherited intelligence that cannot be altered much by schooling. On the other hand, there is the "untapped potential" view — a belief that starts from the assumption that so-called ability is a complex of skills that can be learned. Here, we argue for the underlying belief that all pupils can learn more effectively if one can clear away, by sensitive handling, the obstacles to learning, be they cognitive failures never diagnosed or damage to personal confidence or a combination of the two. Clearly the truth lies between these two extremes, but the evidence is that *ways of managing formative assessment that work with the assumptions of "untapped potential" do help all pupils to learn and can give particular help to those who have previously struggled.*

Policy and Practice

Changing the policy perspective. The assumptions that drive national and state policies for assessment have to be called into question. The promotion of testing as an important component for establishing a competitive market in education can be very harmful. The more recent shifting of emphasis toward setting targets for all, with assessment providing a touchstone to help check pupils' attainments, is a more mature position. However, we would argue that *there is a need now to move further, to focus on the inside of the "black box" and so to explore the potential of assessment to raise standards directly as an integral part of each pupil's learning work.*

It follows from this view that several changes are needed. First, policy ought to start with a recognition that the prime locus for raising standards is the classroom, so that the overarching priority has to be the promotion and support of change within the classroom. Attempts to raise standards by reforming the inputs to and measuring the outputs from the black box of the classroom can be helpful, but they are not adequate on their own. Indeed, their helpfulness can be judged only in light of their effects in classrooms.

The evidence we have presented here establishes that a clearly productive way to start implementing a classroom-focused policy would be to improve formative assessment. This same evidence also establishes that in doing so we would not be concentrating on some minor aspect of the business of teaching and learning. Rather, we would be concentrating on several essential elements: the quality of teacher/pupil interactions, the stimulus and help for pupils to take active responsibility for their own learning, the particular help needed to move pupils out of the trap of "low achievement," and the development of the habits necessary for all students to become lifelong learners. Improvements in formative assessment, which are within the reach of all teachers, can contribute substantially to raising standards in all these ways.

Four steps to implementation. If we accept the argument outlined above, what needs to be done? The proposals outlined below do not follow directly from our analysis of assessment research. They are consistent with its main findings, but they also call on more general sources for guidance.[16]

At one extreme, one might call for more research to find out how best to carry out such work; at the other, one might call for an immediate and large-scale program, with new guidelines that all teachers should put into practice. Neither of these alternatives is sensible: while the first is unnecessary because enough is known from the results of research, the second would be unjustified because not enough is known about classroom practicalities in the context of any one country's schools.

Thus the improvement of formative assessment cannot be a simple matter. There is no quick fix that can alter existing practice by promising rapid rewards. On the contrary, if the substantial rewards promised by the research evidence are to be secured, each teacher must find his or her own ways of incorporating the lessons and ideas set out above into his or her own patterns of classroom work and into the cultural norms and expectations of a particular school community.[17] This process is a relatively slow one and takes place through sustained programs of professional development and support. This fact does not weaken the message here; indeed, it should be seen as a sign of its authenticity, for lasting and fundamental improvements in teaching and learning must take place in this way. A recent international study of innovation and change in education, encompassing 23 projects in 13 member countries of the Organisation for Economic Co-operation and Development, has arrived at exactly the same conclusion with regard to effective policies for change.[18] Such arguments lead us to propose a four-point scheme for teacher development.

1. *Learning from development.* Teachers will not take up ideas that sound attractive, no matter how extensive the research base, if the ideas are presented as general principles that leave the task of translating them into everyday practice entirely up to the teachers. Their classroom lives are too busy and too fragile for all but an outstanding few to undertake such work. What teachers need is a variety of living examples of implementation, as practiced by teachers with whom they can identify and from whom they can derive the confidence that they can do better. They need to see examples of what doing better means in practice.

So changing teachers' practice cannot begin with an extensive program of training for all; that could be justified only if it could be claimed that we have enough "trainers" who know what to do, which is certainly not the case. The essential first step is to set up a small number of local groups of schools — some primary, some secondary, some inner-city, some from outer suburbs, some rural — with each school committed both to a school-based development of formative assessment and to collaboration with other schools in its local group. In such a process, the teachers in their classrooms will be working out the answers to many of the practical questions that the evidence presented here cannot answer. They will be reformulating the issues, perhaps in relation to fundamental insights and certainly in terms that make sense to their peers in other class-

rooms. It is also essential to carry out such development in a range of subject areas, for the research in mathematics education is significantly different from that in language, which is different again from that in the creative arts.

The schools involved would need extra support in order to give their teachers time to plan the initiative in light of existing evidence, to reflect on their experience as it develops, and to offer advice about training others in the future. In addition, there would be a need for external evaluators to help the teachers with their development work and to collect evidence of its effectiveness. Video studies of classroom work would be essential for disseminating findings to others.

2. *Dissemination.* This dimension of the implementation would be in low gear at the outset — offering schools no more than general encouragement and explanation of some of the relevant evidence that they might consider in light of their existing practices. Dissemination efforts would become more active as results and resources became available from the development program. Then strategies for wider dissemination — for example, earmarking funds for inservice training programs — would have to be pursued.

We must emphasize that this process will inevitably be a slow one. To repeat what we said above, *if the substantial rewards promised by the evidence are to be secured, each teacher must find his or her own ways of incorporating the lessons and ideas that are set out above into his or her own patterns of classroom work.* Even with optimum training and support, such a process will take time.

3. *Reducing obstacles.* All features in the education system that actually obstruct the development of effective formative assessment should be examined to see how their negative effects can be reduced. Consider the conclusions from a study of teachers of English in U.S. secondary schools.

> Most of the teachers in this study were caught in conflicts among belief systems and institutional structures, agendas, and values. The point of friction among these conflicts was assessment, which was associated with very powerful feelings of being overwhelmed, and of insecurity, guilt, frustration, and anger. . . . This study suggests that assessment, as it occurs in schools, is far from a merely technical problem. Rather, it is deeply social and personal.[19]

The chief negative influence here is that of short external tests. Such tests can dominate teachers' work, and, insofar as they encourage drilling to produce right answers to short, out-of-context questions, they can lead teachers to act against their own better judgment about the best ways to develop the learning of their pupils. This is not to argue that all such tests are unhelpful. Indeed, they have an important role to play in securing public confidence in the accountability of schools. For the immediate future, what is needed in any development program for formative assessment is to study the interactions between these external tests and formative assessments to see how the models of assessment that external tests can provide could be made more helpful.

All teachers have to undertake some summative assessment. They must report to parents and produce end-of-year reports as classes are due to move on to new teachers. However, the task of assessing

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pupils summatively for external purposes is clearly different from the task of assessing ongoing work to monitor and improve progress. Some argue that these two roles are so different that they should be kept apart. We do not see how this can be done, given that teachers must have some share of responsibility for the former and must take the leading responsibility for the latter.[20] However, teachers clearly face difficult problems in reconciling their formative and summative roles, and confusion in teachers' minds between these roles can impede the improvement of practice.

The arguments here could be taken much further to make the case that teachers should play a far greater role in contributing to summative assessments for accountability. One strong reason for giving teachers a greater role is that they have access to the performance of their pupils in a variety of contexts and over extended periods of time.

This is an important advantage because sampling pupils' achievement by means of short exercises taken under the conditions of formal testing is fraught with dangers. It is now clear that performance in any task varies with the context in which it is presented. Thus some pupils who seem incompetent in tackling a problem under test conditions can look quite different in the more realistic conditions of an everyday encounter with an equivalent problem. Indeed, the conditions under which formal tests are taken threaten validity because they are quite unlike those of everyday performance. An outstanding example here is that collaborative work is very important in everyday life but is forbidden by current norms of formal testing.[21] These points open up wider arguments about assessment systems as a whole — arguments that are beyond the scope of this article.

4. *Research.* It is not difficult to set out a list of questions that would justify further research in this area. Although there are many and varied reports of successful innovations, they generally fail to give clear accounts of one or another of the important details. For example, they are often silent about the actual classroom methods used, the motivation and experience of the teachers, the nature of the tests used as measures of success, or the outlooks and expectations of the pupils involved.

However, while there is ample justification for proceeding with carefully formulated projects, we do not suggest that everyone else should wait for their conclusions. Enough is known to provide a basis for active development work, and some of the most important questions can be answered only through a program of practical implementation.

Directions for future research could include a study of the ways in which teachers understand and deal with the relationship between their formative and summative roles or a comparative study of the predictive validity of teachers' summative assessments versus external test results. Many more questions could be formulated, and it is important for future development that some of these problems be tackled by basic research. At the same time, experienced researchers would also have a vital role to play in the evaluation of the development programs we have proposed.

Are We Serious About Raising Standards?

The findings summarized above and the program we have outlined have implications for a variety of responsible agencies. However, it is the responsibility of governments to take the lead. It would be premature and out of order for us to try to consider the relative roles in such an effort, although success would clearly depend on cooperation among government agencies, academic researchers, and school-based educators.

The main plank of our argument is that standards can be raised only by changes that are put into direct effect by teachers and pupils in classrooms. There is a body of firm evidence that formative assessment is an essential component of classroom work and that its development can raise standards of achievement. We know of no other way of raising standards for which such a strong prima facie case can be made. Our plea is that national and state policy makers will grasp this opportunity and take the lead in this direction.

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1. James W. Stigler and James Hiebert, "Understanding and Improving Classroom Mathematics Instruction: An Overview of the TIMSS Video Study," *Phi Delta Kappan*, September 1997, pp. 19-20.

2. There is no internationally agreed-upon term here. "Classroom evaluation," "classroom assessment," "internal assessment," "instructional assessment," and "student assessment" have been used by different authors, and some of these terms have different meanings in different texts.

3. Paul Black and Dylan Wiliam, "Assessment and Classroom Learning," *Assessment in Education*, March 1998, pp. 7-74.

4. Lynn S. Fuchs and Douglas Fuchs, "Effects of Systematic Formative Evaluation: A Meta-Analysis," *Exceptional Children*, vol. 53, 1986, pp. 199-208.

5. See Albert E. Beaton et al., *Mathematics Achievement in the Middle School Years* (Boston: Boston College, 1996).

6. Lynn S. Fuchs et al., "Effects of Task-Focused Goals on Low-Achieving Students with and Without Learning Disabilities," *American Educational Research Journal*, vol. 34, 1997, pp. 513-43.

7. OFSTED (Office for Standards in Education), *Subjects and Standards: Issues for School Development Arising from OFSTED Inspection Findings 1994-5: Key Stages 3 and 4 and Post-16* (London: Her Majesty's Stationery Office, 1996), p. 40.

8. Nicholas Daws and Birendra Singh, "Formative Assessment: To What Extent Is Its Potential to Enhance Pupils' Science Being Realized?," *School Science Review*, vol. 77, 1996, p. 99.

9. Clement Dassa, Jesús Vazquez-Abad, and Djavid Ajar, "Formative Assessment in a Classroom Setting: From Practice to Computer Innovations," *Alberta Journal of Educational Research*, vol. 39, 1993, p. 116.

10. D. Monty Neill, "Transforming Student Assessment," *Phi Delta Kappan*, September 1997, pp. 35-36.

11. *Task Group on Assessment and Testing: A Report* (London: Department of Education and Science and the Welsh Office, 1988).

12. Richard Daugherty, *National Curriculum Assessment: A Review of Policy, 1987-1994* (London: Falmer Press, 1995).

13. Terry A. Russell, Anne Qualter, and Linda McGuigan, "Reflections on the Implementation of National Curriculum Science Policy for the 5-14 Age Range: Findings and Interpretations from a National Evaluation Study in England," *International Journal of Science Education*, vol. 17, 1995, pp. 481-92.

14. Phillipe Perrenoud, "Towards a Pragmatic Approach to Formative Evaluation," in Penelope Weston, ed., *Assessment of Pupils' Achievement: Motivation and School Success* (Amsterdam: Swets and Zeitlinger, 1991), p. 92.

15. D. Royce Sadler, "Formative Assessment and the Design of Instructional Systems," *Instructional Science*, vol. 18, 1989, pp. 119-44.

16. Paul J. Black and J. Myron Atkin, *Changing the Subject: Innovations in Science, Mathematics, and Technology Education* (London: Routledge for the Organisation for Economic Co-operation and Development, 1996); and Michael G. Fullan, with Suzanne Stiegelbauer, *The New Meaning of Educational Change* (London: Cassell, 1991).

17. See Stigler and Hiebert, pp. 19-20.

18. Black and Atkin, op. cit.

19. Peter Johnston et al., "Assessment of Teaching and Learning in Literature-Based Classrooms," *Teaching and Teacher Education*, vol. 11, 1995, p. 359.

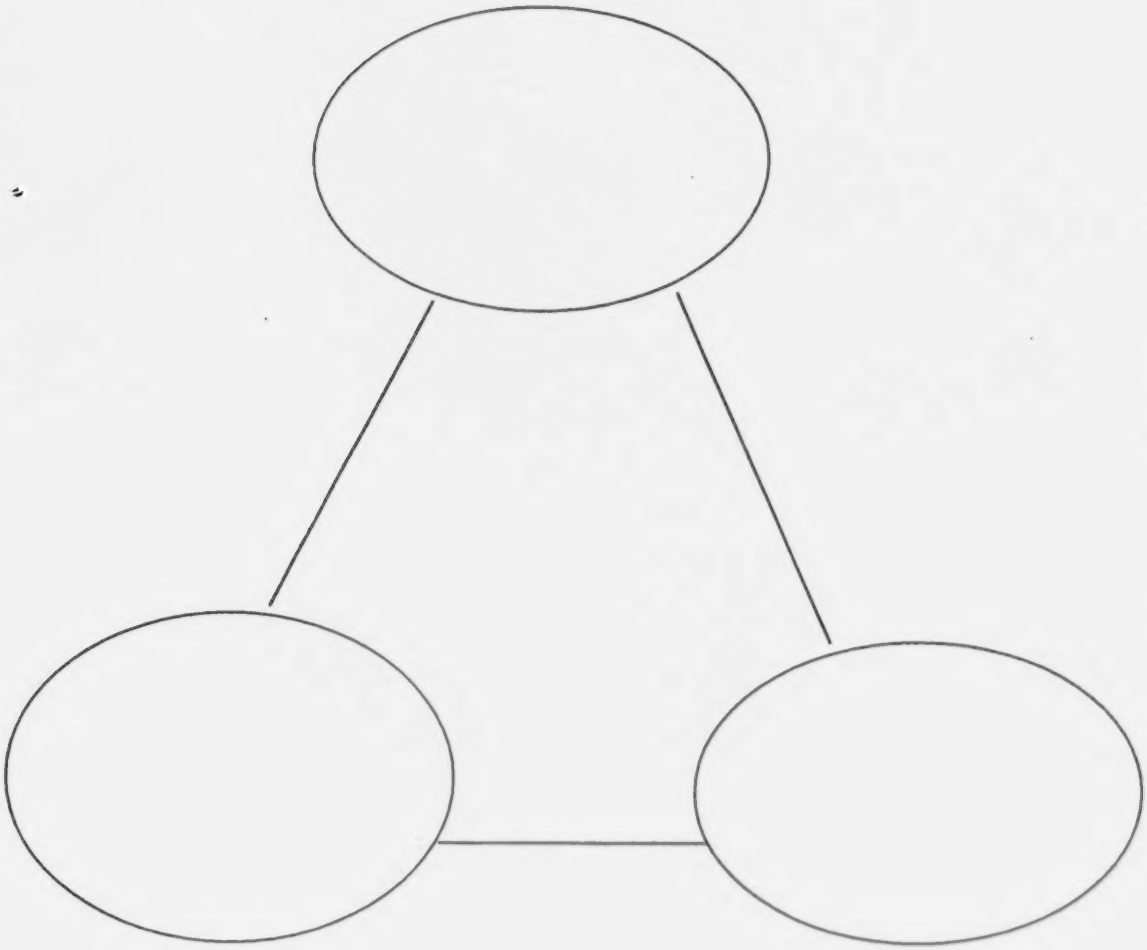
20. Dylan Wiliam and Paul Black, "Meanings and Consequences: A Basis for Distinguishing Formative and Summative Functions of Assessment," *British Educational Research Journal*, vol. 22, 1996, pp. 537-48.

21. These points are developed in some detail in Sam Wineburg, "T. S. Eliot, Collaboration, and the Quandaries of Assessment in a Rapidly Changing World," *Phi Delta Kappan*, September 1997, pp. 59-65.

Checking for understanding – Part I

Directions:

Label the parts of the assessment cycle. Can you do this without looking back in the manual? Check page 19 in the manual and make any additions or corrections to your model. In your own mind, can you give an example for each part of the model?



Checking for understanding – Part II

Define the terms used to relate assessment as a process.

TERM	YOUR OWN DEFINITION	HOW DOES THIS TERM RELATE TO THE ASSESSMENT CYCLE FOUND ON PAGE 19 IN CHAPTER ONE'S TEXT?
Example: **Formative Assessment**	*Formative assessment reflects what I am doing with my students as part of the instructional process. It is ongoing and may or may not reflect a student grade. Formative assessment helps me give students quick feedback for improvement and guides my next steps in instruction.*	*Formative assessment fits into specific areas of this cycle as related to the purposes of assessment, the information needed, the feedback given, the inferences made , and communication with students. Formative assessment constantly reminds my students and me of what I really want my students to know and be able to do.*
Summative Assessment		
Learning Targets		
Diagnosis (related to assessment)		
Feedback		
Inferences		

Clarifying Learning Targets

Chapter Two

Goals:

The focus of this section is to develop an understanding of the importance of clarity of what students must know and be able to do. As you finish this section you will:

1. Clarify what learning targets are.
2. Conceptualize levels of learning targets on a continuum from more comprehensive to most specific.
3. Clarify different categories of learning targets (knowledge, reasoning, skills, products, attitudes).
4. Clarify and determine appropriate instructional activities that will best teach students the targets that will be assessed.

Estimated time for this module: 3 hours

Assigned readings:

Chapter 2 in the manual, "Clarifying Learning Targets," pages 35--42

Questions for discussion and reflection:

1. How would you explain to a new teacher the difference between using the *Standard Course of Study* as your guide to determine what you teach versus using the textbook pages to determine what you teach?
2. What does the following statement mean? "When you are planning for instruction you should plan for assessment at the same time."
3. What is the difference in assessing an activity and assessing student understanding of a learning target?

Required activities:

- Activity 1: Clarifying Learning Targets
- Activity 2: Creating the Big Picture

Optional activities (Choose one):

- Activity 3: Story Swap
- Activity 4: Discussion of Activity 1

Checking for understanding:
Draft a letter to parents

Reflecting on what was learned:

1. How does developing a conceptual road map or knowing very clearly what I'm responsible for teaching make me a more effective teacher?

2. What are the relationships among my *Standard Course of Study*, my pacing guide, my textbook, and other resources?

Complete this checklist when you have finished this module:

_____ Read pp. 35-42 in the manual

_____ Discussed "Questions for discussion and reflection"

_____ Completed "Checking for Understanding"

_____ Completed Activity 1 – Clarifying Learning Targets

_____ Completed Activity 2 – Creating the Big Picture

_____ Completed one activity of your choice

_____ Reflected on what was learned

Activity 1

CLARIFYING LEARNING TARGETS

Directions: Select one topic your class is studying or will soon study, and, using the *Standard Course of Study*, determine the goals and objectives that need to be learned. Complete the following chart, thinking about using learning targets as your guide for instruction.

Topic/unit/subject for this study: _____

<table>
<tr><th>Guiding Question/s</th><th colspan="5">Your Comment/s</th></tr>
<tr><td>1. Write down the basic goals that you want your students to learn in this unit. Use the Standard Course of Study to help you identify those goals.

(These goals are also called the learning targets)</td><td colspan="5"></td></tr>
<tr><td>2. Are there additional learning targets that are necessary for mastering the topic? For example: working in groups or technical writing objectives</td><td colspan="5"></td></tr>
<tr><td>3. What are the important objectives that are smaller components or pieces of the broad goals? These should read: The student will be able to:</td><td colspan="5"></td></tr>
<tr><td>4. Look at your goals and objectives and note how many of them fall into each category. (If you need to, review these categories on page 39 of the text.)</td><td>Knowledge and Information</td><td>Reasoning and problem solving</td><td>Skills and processes</td><td>Products and applications</td><td>Attitudes and dispositions</td></tr>
</table>

Continued on the next page

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5. Which learning targets are the most important for this topic? Prioritize the goals (learning targets).	
6. Describe what students should know and be able to do to provide evidence that they have attained these goals.	
7. What connection to previous learning, the real world, or other topics would be useful?	
8. How will you explain, model, illustrate, or describe these targets so that they are clear to you and to your students? (Include criteria for quality performance.)	
9. What are the likely misconceptions your students may have with the learning targets for this topic?	
10. How much time do you think your students will need to attain these learning targets?	

(Keep these activity sheets for reference in Chapter 3)

Activity 2

CREATING THE BIG PICTURE

Directions:
Create a visual representation of a course you teach and reflect the major things you want your students to know and be able to do.

This visual may be something you give to parents as a guide to your course of study or a large poster that is placed in your room to show the students what they will learn.

Activity 3

STORY SWAP

Directions:

Think of a story to share with colleagues about an experience in which the directions or ultimate goals were unclear to you or a student.

For example: Following the elections when the student council met for the first time, the sponsors gave the new officers job descriptions. One advisor asked the secretary, whose job description included handling correspondence and "taking minutes" in the meetings, to get a list of all council members with home telephone numbers. After the meeting, the newly elected secretary brought the list to the advisor and said, "Thanks for giving me the job description. I wasn't sure what the secretary was supposed to do." When the advisor looked at the list of names and phone numbers, at the bottom of the page he saw written: *"Minutes 7:05 – 7:45."*

Activity 4

DISCUSSION OF ACTIVITY 1

Directions:

Share with colleagues teaching the same grade or a similar course your answers to the guiding questions for activity 1, "Clarifying Learning Targets." Does everyone agree on what the goals and objectives are and how students demonstrate that they have attained those goals and objectives? What are some of the insights you gained from activity 1? Did you gain other insights from your colleagues' ideas?

CHECKING FOR UNDERSTANDING

Directions:
Draft a letter to parents that would describe what a student is expected to know for one subject or course. Include a description of what quality performance looks like. You may wish to include the graphic you created in Activity 2.

Using Multiple Assessment Strategies

Chapter Three

Goals:

The focus of this section is to explore various assessment strategies. As you finish this section you will:

1. Know the five major assessment strategies (categories) for assessing student learning and know the various assessment methods associated with each strategy.
2. Match the kinds of learning targets with the assessment methods that will give the best evidence or information of what students know and are able to do.
3. Understand the importance of using assessment variety for better information about student thinking and reasoning.

Estimated time for this module: 3 hours

Assigned readings:

Chapter 3 in the manual, "Using Multiple Assessment Strategies," pages 43 - 62. (You will need a copy of your *Standard Course of Study* for this section.)

Questions for discussion and reflection:

1. What assessment methods do you use with your students most often? Why?
2. What types of information do you gain from the different assessment strategies? What are the advantages and disadvantages of each strategy?
3. How does it help the student when you use a variety of assessment methods?

Required activities:

- Activity 1 – Using Multiple Assessment Methods
- Activity 2 – Analogy: Learning as a Road Map
- Activity 3 – Analyzing Assessment Methods

Checking for understanding:

Open-ended questions

Reflecting on what was learned:

1. How may using multiple assessment methods result in improved student learning and achievement?

2. What is one assessment strategy that I have not used frequently and that I might consider implementing?

Complete this checklist when you have finished this module:

_____ Read pp. 43 - 62 in the manual

_____ Discussed "Questions for discussion and reflection"

_____ Completed Activity 1 – Using Multiple Assessment Methods

_____ Completed Activity 2 – Analogy: Learning as a Road Map

_____ Completed Activity 3 – Analyzing Assessment Methods

_____ Completed "Checking for Understanding"

_____ Reflected on what was learned

Activity 1

Using Multiple Assessment Methods

Directions: Refer to Activity 1 in Chapter 2 and use the information you collected and recorded. You will use the same goals and objectives (pick one or two of the major ones) to take a closer look at the appropriate assessment methods and strategies you will consider for assessing these learning targets.

Think about	Goal 1	Goal 2
What goals have you chosen?		
What categories of learning targets are you assessing?		
What assessment methods may be best to use and why? (Refer to the five basic strategies and define the actual method you will use.)		
If you use this method, what will it tell you about your students?		
What problems might your students have with this assessment method?		
What preparation would help students demonstrate their learning through this method of assessment?	BEST COPY AVAILABLE	

Activity 2:

Analogy: Learning as a Roadmap

Directions:

Read this story and then discuss the questions at the end of the story.

A married couple, Sarah and Frank, both of whom are teachers, love to travel in the summer. They prefer to take road trips, visiting interesting places they have never seen. Sarah is always the designated driver and Frank always reads the map and gives directions. After a number of these trips, Sarah, who is a third grade teacher, tells Frank:

"Even though I'm always the driver, I couldn't possibly retrace any of the trips we have taken. I just follow your directions, turning when you tell me to.

"That's like my students. Even though they're doing the work, they rely on me for directions, following orders but not understanding where they are or where they are going. I think they need to become map readers!"

As teachers, we have always used a variety of assessment methods. Where some teachers may fall short is in helping students know what learning targets are and what criteria determine success in these assessments.

Discuss these questions on how this story relates to the classroom:

1. How is the destination of Sarah and Frank's trip like a learning target?
2. Can students reach a destination without understanding how they arrived there? Explain.

Activity 3

Analyzing Assessment Methods

Directions: Take the last four assessments you gave your students and analyze them according to assessment method and category of learning target.

Assessment Methods Used	Categories of Learning Targets	Did the method match the intended target? How do you know?
1.		
2.		
3.		
4.		

Did you use a variety of assessment methods with the four assessments you used with your students? Why is this important?

Checking for Understanding

1. What are five assessment strategies? Give two methods that exemplify each strategy?

2. When would a teacher use selected response?

3. What are some criteria for effective performance assessments or tasks?

4. When are observations helpful?

5. When would you use a checklist?

Making Decisions and Taking Action

Chapter 4

Goals:

The focus of this section is to use assessment data to make instructional decisions and give feedback to students. As you finish this section you will:

1. Describe the importance of quality evidence and appropriate methods in making judgments about student achievement.
2. Describe the use of assessment information in making decisions and taking action to help students achieve
3. Know the many different kinds of decisions that assessment data can inform.
4. Discuss how the quality of decisions you make is influenced by the quality of data you have.

Estimated time for this module: 5 hours

Assigned readings:

Chapter 4 in the manual, "Making Decisions and Taking Action," pages 63 - 76

Questions for discussion and reflection

1. After you have completed an assessment with your students, how do you use the information about individual students to make decisions about the class as a whole?
2. What other types of decisions do you make using assessment information? Explain.
3. How do you provide feedback to students and what is the nature of that feedback about individual student learning?
4. Having studied the assessment and instructional cycle and reflected on learning targets and assessment strategies, what decisions might you make in your classroom to make assessment more a part of your ongoing daily classroom routine?

Required activities:

- Activity 1- The Camping Trip
- Activity 2- Looking at your Students' Work
- Activity 3 - Critique of Assessment Environment. *If your students are old enough to read this form, allow them to complete the same form and then check to see how closely your perceptions match theirs.*
- Activity 4 – Video Segment Review

Checking for understanding:

Short response questions

Reflecting on what was learned:

1. How confident am I that the assessments I am using in the classroom really measure what I want to measure? Explain.

2. How do the instructional decisions that I make about individual students or groups influence their achievement at the end of the year?

Complete this checklist when you have finished this module.

_____ Read pp. 63-76 in manual

_____ Discussed "Questions for discussion and reflection"

_____ Completed Activity 1 -The Camping Trip

_____ Completed Activity 2 - Looking at your Students' Work

_____ Completed Activity 3 - Critique of Assessment Environment

_____ Completed Activity 4 – Video Segment Review

_____ Completed "Checking for Understanding"

_____ Reflected on what was learned

Activity 1

The Camping Trip

(This activity is adapted from Improving Classroom Assessment: A Toolkit for Professional Developers, Toolkit 98, Appendix B, Sample b.4, SERVE.)

This activity involves judging the quality of fifth graders' work on an open-ended mathematics prompt. Cut apart the different student work samples and sort them into three stacks (*strong*, *medium*, and *weak* responses). Then, in pairs, discuss the sorting and reach a consensus on which papers belong in which stacks. Fill in the chart below to describe the features that make stack 1 different from stack 2 and stack 2 different from stack 3. (In this way, you are beginning to delineate criteria for quality responses to open-ended mathematics questions.)

	High	Medium	Low
Record which samples are in each category.			
What are the criteria for placement in this category?			

Discuss your categorizations and the criteria that underlie them. Did you comment on accuracy, clarity of explanation, logical reasoning, and appropriateness of mathematics for the given prompt?

Sample 1

14. A group of 8 people are all going camping for three days and need to carry their own water. They read in a guide book that 12.5 liters are needed for a party of 5 people for 1 day. Based on the guide book, what is the minimum amount of water the 8 people should carry all together?

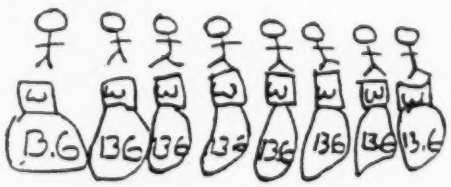
Explain your answer.

If 12.5 liters are needed for 5 people for 1 day well then 45 liters will be needed for three days for 8 people because for 1 person it was 1.5 which all together equaled 12.5 for 1 day, for 8 people to go on a 1 day trip you'd have to bring 45 liters.

Sample 2

14. A group of 8 people are all going camping for three days and need to carry their own water. They read in a guide book that 12.5 liters are needed for a party of 5 people for 1 day. Based on the guide book, what is the minimum amount of water the 8 people should carry all together?

Explain your answer.



$$\begin{array}{r} 12.5 \\ \times\ 3 \\ \hline 37.5 \\ +\ 8 \\ \hline 13.2 \end{array}$$

liters of water
13.6 for 8 people to bring
camping for 3 days

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Sample 3

14. A group of 8 people are all going camping for three days and need to carry their own water. They read in a guide book that 12.5 liters are needed for a party of 5 people for 1 day. Based on the guide book, what is the minimum amount of water the 8 people should carry all together?

Explain your answer. 60 Liters

I came up with that by getting how much 1 person needed Then how much 8 people needed that was 20 and then I multaplied that by three for three days and came up with sixty

Sample 4

14. A group of 8 people are all going camping for three days and need to carry their own water. They read in a guide book that 12.5 liters are needed for a party of 5 people for 1 day. Based on the guide book, what is the minimum amount of water the 8 people should carry all together?

Explain your answer. 20. liters for 8 people one day

2.5 for each person

12.5
+ 5
2.5

12.5
+ 2.5
15.0
+ 2.5
17.5
+ 2.5
20.0

Sample 5

14. A group of 8 people are all going camping for three days and need to carry their own water. They read in a guide book that 12.5 liters are needed for a party of 5 people for 1 day. Based on the guide book, what is the minimum amount of water the 8 people should carry all together?

Explain your answer.

2.5 liters/person
5 people | 12.5 liters

2.5 l/person
× 8 people
20 liters/day

20 liters/day
× 3 days
60 liters in all

I divided 12.5 liters ÷ 5 people = 2.5 liters/person. I did that so that I could take 2.5 liters × 8 people = 20 liters/day. Now I need to multiply 20 liters/day × 3 days = 60 liters to last the whole camping trip. 60 Liters in all.

Sample 6

1
12.5 litters
× 2
4
25.0 litters
× 8 people
200.0 litters
× 3 days
600.0 litters are needed for 8 people for 3 days

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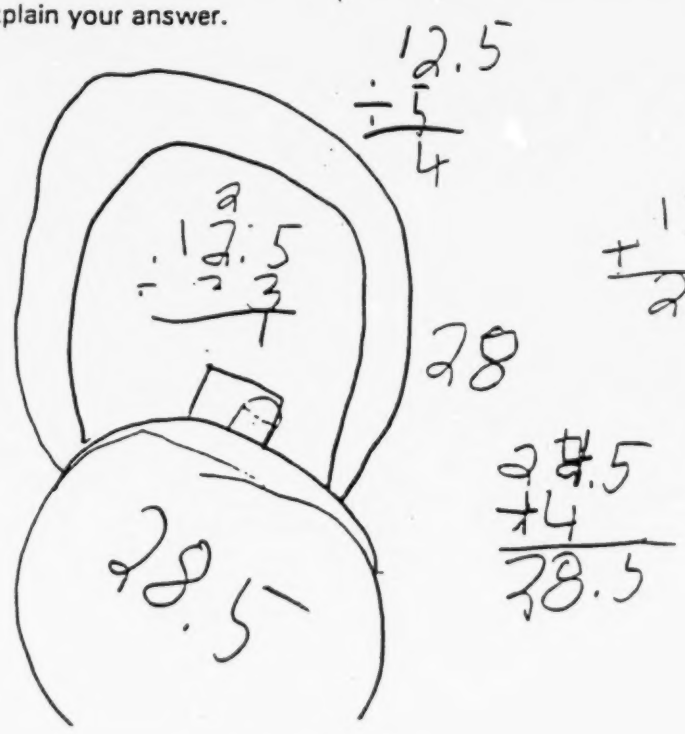
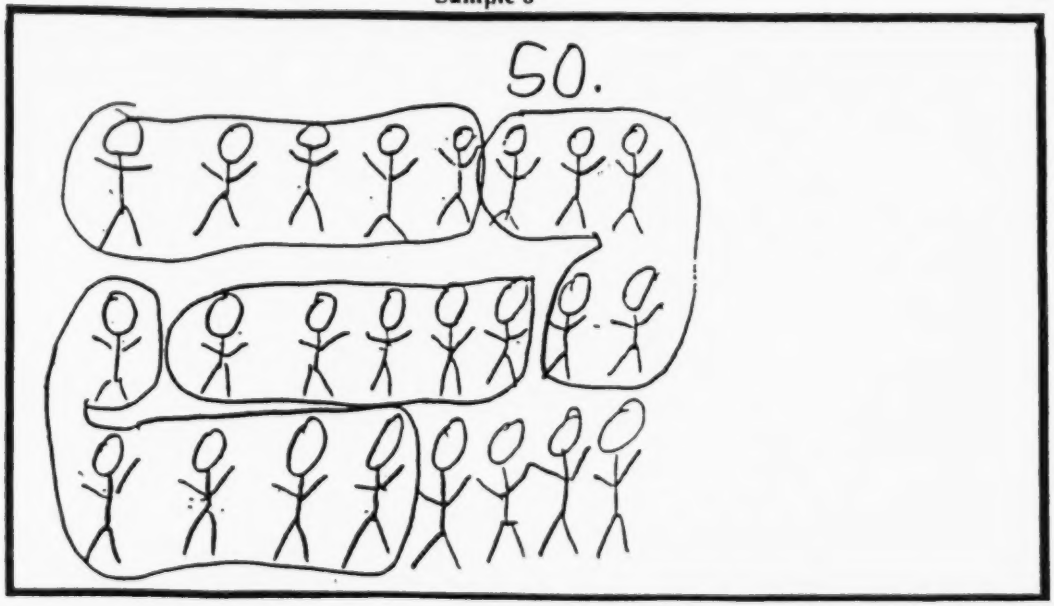
Sample 7

14. A group of 8 people are all going camping for three days and need to carry their own water. They read in a guide book that 12.5 liters are needed for a party of 5 people for 1 day. Based on the guide book, what is the minimum amount of water the 8 people should carry all together?

Explain your answer.



Sample 8



Sample 9

14. A group of 8 people are all going camping for three days and need to carry their own water. They read in a guide book that 12.5 liters are needed for a party of 5 people for 1 day. Based on the guide book, what is the minimum amount of water the 8 people should carry all together?

Explain your answer.

2.5 liters of water a piece
5 people | 12.5 liters of water for a group of 5 people.

2.5 liters each of water
x 8 people
20 liters of water needs to be taken at 2.5 liters each

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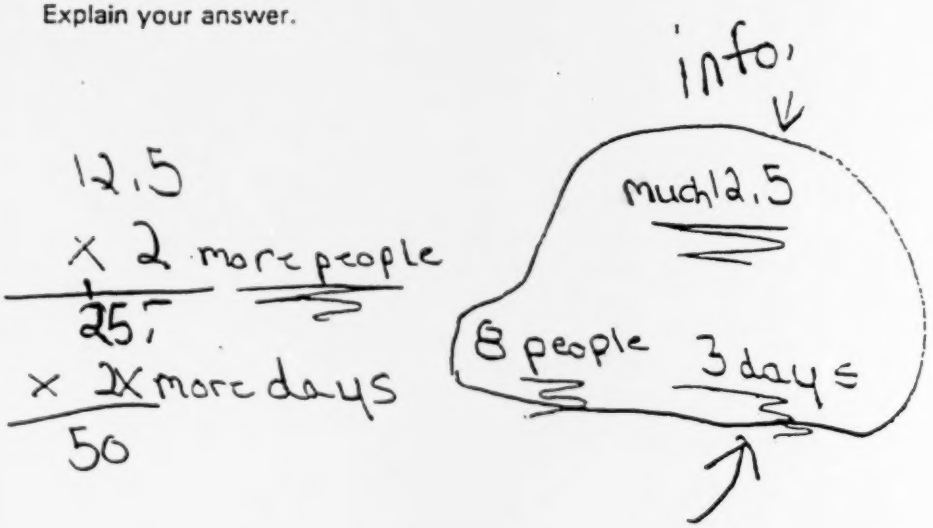
Sample 10

14. A group of 8 people are all going camping for three days and need to carry their own water. They read in a guide book that 12.5 liters are needed for a party of 5 people for 1 day. Based on the guide book, what is the minimum amount of water the 8 people should carry all together?

Explain your answer.



First e gathered some important info. 5 peopl for one day was 12.5 e add two people by timing to equel 25. then e times it by two again for the day e new that one day was all ready carried 50 liters

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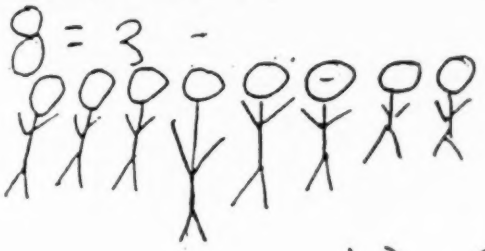
Sample 11

14. A group of 8 people are all going camping for three days and need to carry their own water. They read in a guide book that 12.5 liters are needed for a party of 5 people for 1 day. Based on the guide book, what is the minimum amount of water the 8 people should carry all together?

Explain your answer.



12.5
÷ 5
2.5
x 4
10
+50
60

Sample 12

14. A group of 8 people are all going camping for three days and need to carry their own water. They read in a guide book that 12.5 liters are needed for a party of 5 people for 1 day. Based on the guide book, what is the minimum amount of water the 8 people should carry all together?

Explain your answer. They can bring enough water for 5 people for 6 days which 75 liters which should be enough

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Activity 2

Looking at your Students' Work

This activity involves judging the *quality* of the work of students in your classes. For this activity, work in groups of no more than three.

Directions: Each teacher should bring a sample set of papers from a recent assignment, including the directions (prompt) to the class. This set should be 8 samples that include a full range of performance levels. The papers should not have scores or student names on them. The process will be facilitated if the papers are copied so that each person has a set. For each set of papers, sort the work into stacks of high, medium, and low performance and discuss how the work in each stack is different.

How would a score be obtained for these papers? How would the scores relate to the criteria you established in sorting the papers?

Are there patterns in the types of errors individual students are making? Could these errors have been avoided by clearer instructions.

Are there patterns in the types of errors the students as a class are making?

Can you see what students understand clearly and can perform proficiently?

Can you spot gaps in their learning or misconceptions?

Activity 3

Critique of the Assessment Environment in this Class

Directions:
Read each question and check the appropriate box. This data collection sheet is appropriate both for teachers and middle and high school students.

Assessments in this classroom:	Check the appropriate box		
	Never	Sometimes	Most of the time
1. Assess students on clear goals			
2. Ask students to go beyond simple recall of facts			
3. Give clear criteria for quality performance to students prior to the assessment			
4. Allow students an opportunity to self assess or revise work			
5. Allow students an opportunity to peer assess and help each other improve			
6. Reveal levels of proficiency (not just correct or incorrect responses)			
7. Are used by the teacher to improve and adjust instructional strategies			
8. Provide clear and concise instructions to students			
9. Are interesting to do			
10. Reflect what the state, district or school value in student learning			
11. Are designed as free as possible of cultural, ethnic, or gender stereotypes			
12. Allow adequate time for completion			
13. Are worth doing			
14. Have an appropriate level of difficulty			
15. Allow students to know how a score will be determined			

What actions should be taken to improve assessments in this classroom?

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Activity 4

Video Segment Review

Directions:
Watch the Annenberg videotape of the grade span (K-4, 5-8, and 9-12) which you teach. There are introductory materials in the manual that will acquaint you with the videotape before you view the segment appropriate to your grade span.

Think about and discuss: How are teachers in this videotape using assessment data to make decisions?

Checking for Understanding

Give at least three examples that illustrate:
The difference between high and low inferences:
The issues and ideas you consider when interpreting assessment data:
The criteria for quality evidence:
The kinds of decisions teachers make using assessment data:

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Documenting and Communicating

Chapter 5

Goals:

The focus of this chapter is why documentation and communication of assessment information helps students take greater responsibility for their learning. As you finish this chapter you will:

1. Understand how efficient ways to document and manage assessment information are important.
2. Understand how to provide feedback for learning and teaching.
3. Discuss the importance of clear and effective assessment information for all targeted audiences.
4. Consider communication options for clarifying student expectations that encourage students to take greater responsibility for their own learning.
5. Understand what information is needed to determine a proficiency level for the intended learning.

Estimated time for this module: 3 hours

Special Note: This chapter contains a great deal of information that covers four very important topics: portfolio assessment, grading and reporting issues, the use of rubrics, and the use of student-led parent conferences. The context of this chapter is not meant to address these topics in depth but only to give basic information for gaining a fundamental literacy level for each topic.

Assigned readings:

Chapter 5 in the manual, "Documenting and Communicating," pages 77 - 100

Questions for discussion and reflection:

1. How do I currently document/record student assessment information?
2. Why am I recording and documenting my student information in this way?
3. Am I documenting what I really value and expect in student learning?
4. How do I communicate to my students and parents what students have learned?
5. What types of communication tools do I use to give students feedback?
6. What strategies do I use to encourage students to take responsibility for their own learning?

Required activity:

- Activity 1 – Documenting Assessments and Communicating Results

Optional activities: (Choose one)

- Activity 2 – "Grading: The Issue is not How, but Why" by Alfie Kohn
- Activity 3 – Issues in Grading and Reporting
- Activity 4 – A Closer Look at *One* Assessment Topic

Checking for understanding:

Generating questions

Reflecting on what was learned:

1. How does the use of portfolios and student-led parent conferences promote greater student understanding of learning goals?

2. How does the use of rubrics and specific feedback to students promote greater student achievement?

Complete this checklist when you have finished this module.

_____ Read pp. 77-100 in the manual

_____ Discussed "Questions for discussion and reflection"

_____ Completed Activity 1 – Documenting and Communicating Results

_____ Completed "Checking for Understanding"

_____ Completed one optional activity

_____ Reflected upon what was learned

ACTIVITY 1

DOCUMENTING AND COMMUNICATING RESULTS

Directions:
Continue to build on the required activities for Chapters 2 - 4 by using that information to work through the following questions and reflections on the assessment you gave your students.

QUESTIONS TO PONDER	YOUR RESPONSE TO QUESTIONS	HOW DID YOU DO THIS? AND WHAT WOULD YOU CHANGE NEXT TIME?
Did you decide prior to giving your students this assessment **what** information would be recorded?		
Did your students understand **what** information would be recorded?		
Did you decide ahead of time **how** you would record the information you collected using this assessment?		
Did you decide ahead of time **how** the information would be communicated to the appropriate audiences?		
Was there anything unique for you about the way you documented or communicated this assessment information?		
Were you able to communicate to your students the importance of the learning targets during this assessment process?		
Did your assessment communicate to students a process for learning or did it communicate a thing done to them to see what they know?		
Did you involve the students directly in deciding when, how and why they would be assessed and how they wanted to receive their feedback?		

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Activity 2

ISSUES IN GRADING AND REPORTING
"GRADING: THE ISSUE IS NOT HOW BUT WHY"

PART ONE

Write down the **three** biggest questions about grading and reporting that you hear from your colleagues.

1. _____

2. _____

3. _____

Do you feel these questions are important ones for you personally? Why?

_____

PART TWO

Read "Grading: The Issue Is Not How but Why," copyright 1994 by Alfie Kohn, reprinted from *Educational Leadership*, October 1994, with the author's permission. The article is reprinted on the following pages. Where in Kohn's three levels of concern about grading and reporting do your questions from Part I fall?

		Where do your questions fall? Why?
Level I: Level 2: Level 3:	• How to combine numbers. • Beyond traditional. • Why grade? Why assess?	

PART THREE

LIST AT LEAST ONE THING FROM THE KOHN ARTICLE IN EACH CATEGORY:
I like…
I don't like…this makes me uncomfortable…
This is interesting; I want to think more about it…

Grading: The Issue Is Not How but Why

Alfie Kohn

Only by abandoning traditional grading and performance assessment practices can we achieve our ultimate educational objectives.

Why are we concerned with evaluating how well students are doing? The question of motive, as opposed to method, can lead us to rethink basic tenets of teaching and learning, and to evaluate what students have done in a manner more consistent with our ultimate educational objectives. But not all approaches to the topic result in this sort of thoughtful reflection. In fact, approaches to assessment may be classified according to their depth of analysis and willingness to question fundamental assumptions about how and why we grade. Consider three possible levels of inquiry:

Level 1. These are the most superficial concerns, those limited to the practical issue of *how* to grade students' work. Here we find articles and books offering elaborate formulas for scoring assignments, computing points, and allocating final grades—thereby taking for granted that what students do must receive *some* grades and, by extension, that students ought to be avidly concerned about the ones they will get.

Level 2. Here educators call the above premises into question, asking whether traditional grading is really necessary or useful for assessing students' performance. Alternative assessments, often designated as "authentic," belong in this category. The idea here is to provide a richer, deeper description of students' achievement. (Portfolios of students' work are sometimes commended to us in this context, but when a portfolio is used merely as a means of arriving at a traditional grade, it might more accurately be grouped under Level 1.)

Level 3. Rather than challenging grades alone, discussions at this level challenge the whole enterprise of assessment—and specifically why we are evaluating students as opposed to *how* we are doing so. No matter how elaborate or carefully designed an assessment strategy may be, the result will not be constructive if our reason for wanting to know how students are doing is itself objectionable.

Grading Rationale I: Sorting

One reason for evaluating students is to be able to label them on the basis of their performance and thus to sort them like so many potatoes. Sorting, in turn, has been criticized at each of the three levels, but for very different reasons. At Level 1, the concern is merely that we are not correctly dumping individuals into the right piles. The major problem with our high schools and colleges, the argument goes, is that they don't keep enough students off the Excellent pile. (These critics don't put it quite this way, of course; they talk about "grade inflation.") Interestingly, most studies suggest that student performance does not improve when instructors grade more stringently and, conversely, that making it relatively easy to get a good grade does not lead students to do inferior work—even when performance is defined as the number of facts retained temporarily as measured by multiple-choice exams (Vasta and Sarmiento 1979, Abrami et al. 1980).

At Level 2, questions are raised about whether grades are reliable enough to allow students to be sorted effectively. Indeed, studies show that any particular teacher may well give different grades to a single piece of work submitted at two different times. Naturally the variation is even greater when the work is evaluated by more than one teacher (Kirschenbaum et al. 1971). What grades offer is spurious precision, a subjective rating masquerading as an objective assessment.

From the perspective of Level 3, this criticism is far too tame. The trouble is not that we are sorting students badly—a problem that logically should be addressed by trying to do it better. The trouble is that we are sorting them at all. Are we doing so in order to segregate students by ability and teach them separately? The harms of this practice have been well established (Oakes 1985). Are we turning schools into "bargain-basement personnel screening agencies for business" (Campbell 1974, p. 145)? Whatever use we make of sorting, the process itself is very different from—and often incompatible with—the goal of helping students to learn.

Grading Rationale II: Motivation

A second rationale for grading—and indeed, one of the major motives behind assessment in general—is to motivate students to work harder so they will receive a favorable evaluation. Unfortunately, this rationale is just as problematic as sorting. Indeed, given the extent to which *A*'s and *F*'s function as rewards and punishments rather than as useful feedback, grades are counterproductive regardless of whether they are intentionally used for this purpose. The trouble lies with the implicit assumption that there exists a single entity called "motivation" that

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students have to a greater or lesser degree. In reality, a critical and qualitative difference exists between *intrinsic* and *extrinsic* motivation—between an interest in what one is learning for its own sake, and a mindset in which learning is viewed as a means to an end, the end being to escape a punishment or snag a reward. Not only are these two orientations distinct, but they also often pull in opposite directions.

Scores of studies in social psychology and related fields have demonstrated that extrinsic motivators frequently undermine intrinsic motivation. This may not be particularly surprising in the case of sticks, but it is no less true of carrots. People who are promised rewards for doing something tend to lose interest in whatever they had to do to obtain the reward. Studies also show that, contrary to the conventional wisdom in our society, people who have been led to think about what they will receive for engaging in a task (or for doing it well) are apt to do lower quality work than those who are not expecting to get anything at all.

These findings are consistent across a variety of subject populations, rewards, and tasks, with the most destructive effects occurring in activities that require creativity or higher-order thinking. That this effect is produced by the extrinsic motivators known as grades has been documented with students of different ages and from different cultures. Yet the findings are rarely cited by educators.

Studies have shown that the more students are induced to think about what they will get on an assignment, the more their desire to learn evaporates, and, ironically, the less well they do. Consider these findings:

- On tasks requiring varying degrees of creativity, Israeli educational psychologist Ruth Butler has repeatedly found that students perform less well and are less interested in what they are doing when being graded than when they are encouraged to focus on the task itself (Butler and Nissan 1986; Butler 1987, 1988).
- Even in the case of rote learning, students are more apt to forget what they have learned after a week or so—and are less apt to find it interesting—if they are initially advised that they will be graded on their performance (Grolnick and Ryan 1987).
- When Japanese students were told that a history test would count toward their final grade, they were less interested in the subject—and less likely to prefer tackling difficult questions—than those who were told the test was just for monitoring their progress (Kage 1991).
- Children told that they would be graded on their solution of anagrams chose easier ones to work on—and seemed to take less pleasure from solving them—than children who were not being graded (Harter 1978).

> Rather than challenging grades alone, we need to question the whole enterprise of assessment.

As an article in the *Journal of Educational Psychology* concluded, "Grades may encourage an emphasis on quantitative aspects of learning, depress creativity, foster fear of failure, and undermine interest" (Butler and Nissan 1986, p. 215). This is a particularly ironic result if the rationale for evaluating students in the first place is to encourage them to perform better.

Grading Rationale III: Feedback

Some educators insist that their purpose in evaluating students is neither to sort them nor to motivate them, but simply to provide feedback so they can learn more effectively tomorrow than they did today. From a Level 2 perspective, this is an entirely legitimate goal—and grades are an entirely inadequate means of reaching it. There is nothing wrong with helping students to internalize and work toward meeting high standards, but that is most likely to happen when they "experience success and failure not as reward and punishment, but as information" (Bruner 1961, p. 26). Grades make it very difficult to do this. Besides, reducing someone's work to a letter or number simply is not helpful; a *B+* on top of a paper tells a student nothing about what was impressive about that paper or how it could be improved.

But from Level 3 comes the following challenge: *Why do we want students to improve*? This question at first seems as simple and bland as baby food; only after a moment does it reveal a jalapeño kick: it leads us into disconcerting questions about the purpose of education itself.

Demand vs. Support

Eric Schaps (1993), who directs the Developmental Studies Center in Oakland, California, has emphasized

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"a single powerful distinction: focusing on what students ought to be able to do, that is, what we will demand of them—as contrasted with focusing on what we can do to support students' development and help them learn." For lack of better labels, let us call these the "demand" and "support" models.

In the demand model, students are workers who are obligated to do a better job. Blame is leveled by saying students "chose" not to study or "earned" a certain grade—conveniently removing all responsibility from educators and deflecting attention from the curriculum and the context in which it is taught. In their evaluations, teachers report whether students did what they were supposed to do. This mind-set often lurks behind even relatively enlightened programs that emphasize performance assessment and—a common buzzword these days—*outcomes*. (It also manifests itself in the view of education as an investment, a way of preparing children to become future workers.)

> The trouble is not that we are sorting students badly, the trouble is that we are sorting them at all.

The support model, by contrast, helps children take part in an "adventure in ideas" (Nicholls and Hazzard 1993), guiding and stimulating their natural inclination to explore what is unfamiliar; to construct meaning; to develop a competence with and a passion for playing with words, numbers, and ideas. This approach meshes with what is sometimes called "learner-centered learning," in which the point is to help students act on their desire to make sense of the world. In this context, student evaluation is, in part, a way of determining how effective *we* have been as educators. In sum, improvement is not something we require of students so much as something that follows when we provide them with engaging tasks and a supportive environment.

Supportive Assessment

Here are five principles of assessment that follow from this support model:

1. Assessment of any kind should not be overdone. Getting students to become preoccupied with *how* they are doing can undermine their interest in *what* they are doing. An excessive concern with performance can erode curiosity—and, paradoxically, reduce the quality of performance. Performance-obsessed students also tend to avoid difficult tasks so they can escape a negative evaluation.

2. The best evidence we have of whether we are succeeding as educators comes from observing children's behavior rather than from test scores or grades. It comes from watching to see whether they continue arguing animatedly about an issue raised in class after the class is over, whether they come home chattering about something they discovered in school, whether they read on their own time. Where interest is sparked, skills are usually acquired. Of course, interest is difficult to quantify, but the solution is not to return to more conventional measuring methods; it is to acknowledge the limits of measurement.

3. We must transform schools into safe, caring communities. This is critical for helping students to become good learners and good people, but it is also relevant to assessment. Only in a safe place, where there is no fear of humiliation and punitive judgment, will students admit to being confused about what they have read and feel free to acknowledge their mistakes. Only by being able to ask for help will they be likely to improve.

Ironically, the climate created by an emphasis on grades, standardized testing, coercive mechanisms such as pop quizzes and compulsory recitation, and pressure on teachers to cover a prescribed curriculum makes it more difficult to know how well students understand—and thus to help them along.

4. Any responsible conversation about assessment must attend to the quality of the curriculum. The easy question is whether a student has learned something; the far more important—and unsettling—question is whether the student has been given something worth learning. (The answer to the latter question is almost certainly no if the need to evaluate students has determined curriculum content.) Research corroborates what thoughtful teachers know from experience: when students have interesting things to do, artificial inducements to boost achievement are unnecessary (Moeller and Reschke 1993).

5. Students must be invited to participate in determining the criteria by which their work will be judged, and then play a role in weighing their work against those criteria. Indeed, they should help make decisions about as many elements of their learning as possible (Kohn 1993). This achieves several things: It gives them more control over their education, makes evaluation feel less punitive, and provides an important learning experience in itself. If there is a movement away from grades, teachers should explain the rationale and solicit students' suggestions for what to do instead and how to manage the transitional period. That transition may be bumpy and slow, but the chance to engage in personal and collective reflection about these issues will be important in its own right.

And If You Must Grade ...

Finally, *while conventional grades persist, teachers and parents ought to*

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do everything in their power to help students forget about them. Here are some practical suggestions for reducing the salience.

■ *Refrain from giving a letter or number grade for individual assignments,* even if you are compelled to give one at the end of the term. The data suggest that substantive comments should replace, not supplement, grades (Butler 1988). Make sure the effect of doing this is not to create suspense about what students are going to get on their report cards, which would defeat the whole purpose. Some older students may experience, especially at first, a sense of existential vertigo: a steady supply of grades has defined them. Offer to discuss privately with any such student the grade he or she would probably receive if report cards were handed out that day. With luck and skill, the requests for ratings will decrease as students come to be involved in what is being taught.

■ *Never grade students while they are still learning something and, even more important, do not reward them for their performance at that point.* Studies suggest that rewards are most destructive when given for skills still being honed (Condry and Chambers 1978). If it is unclear whether students feel ready to demonstrate what they know, there is an easy way to find out: ask them.

■ *Never grade on a curve.* The number of good grades should not be artificially limited so that one student's success makes another's less likely. Stipulating that only a few individuals can get top marks regardless of how well everyone does is egregiously unfair on its face. It also undermines collaboration and community. Of course, grades of any kind, even when they are not curved to create artificial scarcity—or deliberately publicized—tend to foster comparison and competition, an emphasis on relative standing. This is not only destructive to students' self-esteem and relationships but also counterproductive with respect to the quality of learning (Kohn 1992).

As one book on the subject puts it: "It is not a symbol of rigor to have grades fall into a 'normal' distribution; rather, it is a symbol of failure—failure to teach well, to test well, and to have any influence at all on the intellectual lives of students" (Milton et al. 1986, p. 225).

■ *Never give a separate grade for effort.* When students seem to be indifferent to what they are being asked to learn, educators sometimes respond with the very strategy that precipitated the problem in the first place—grading students' efforts to coerce them to try harder. The fatal paradox is that while coercion can sometimes elicit resentful obedience, it can never create desire. A low grade for effort is more likely to be read as "You're a failure even at trying." On the other hand, a high grade for effort combined with a low grade for achievement says "You're just too dumb to succeed." Most of all, rewarding or punishing children's efforts allows educators to ignore the possibility that the curriculum or learning environment may have something to do with students' lack of enthusiasm. ■

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Activity 3

THINGS THAT MAY OR MAY NOT BE UNDER OUR CONTROL
TAKE TIME TO REFLECT

Directions:
Review page 99 in the manual. Decide if you agree or disagree with the advice from Rick Stiggins and reflect on why or why not.

STIGGIN'S STATEMENT	AGREE OR DISAGREE	WHY?
1. Grade on achievement of prespecified targets only, not intelligence, effort, attitude, or personality.		
2. Always rely on the most current information available about student achievement.		
3. Devise grades that reflect achievement status with respect to preset targets rather than improvement.		
4. Decide borderline cases with additional information on achievement.		
5. Keep grading procedures separate from punishment.		
6. Change all policies that lead to miscommunication about achievement.		
7. Add further detail to grade reports when needed.		
8. Expect individual accountability for learning even in cooperative environments.		
9. Give extra credit for evidence of extra learning—not just for doing extra work.		

Find a peer or faculty group to discuss these statements. How much agreement would you expect to find among your colleagues? What benefit would such discussion have for your school?

Activity 4

A Closer Look at Assessment Topics

Directions: The purpose of this optional activity is to take a closer look at student-led parent conferences, portfolios, or senior projects to determine when, why and how these are used. Choose one of the topics and respond to the questions. *(Do only one page.)*

Questions/Comments	Your Response to Student-Led Parent Conferences
1. Refer to Chapter 5, pages 90-95 and determine what a **student-led parent conference** involves.	
2. What are some of the advantages/benefits you would note for parents and students when this process is used?	
3. What are some barriers or disadvantages you would note for parents and students when this process is used?	
4. How would you work around any barriers to this process?	
5. What would be the main purpose for a teacher to utilize this assessment process?	
6. What would be your biggest question about the use of this assessment strategy? Would you ever consider using student-led parent conferences?	

Activity 4 continued

QUESTIONS/COMMENTS	YOUR RESPONSE TO PORTFOLIOS
1. Refer to Chapter 5, pages 86-89, and describe what a **portfolio** is.	
2. What are some of the advantages/benefits you would note for parents and students when this assessment process is used?	
3. What are some of the disadvantages or barriers you would note for parents and students when this assessment process is used?	
4. Would there be ways to work around the barriers to this process? How would you do that?	
5. What would be the main purpose for a teacher to utilize this assessment process?	
6. What would be your biggest question about the use of this assessment strategy? Would you every consider using portfolios?	

Activity 4 continued

QUESTIONS/COMMENTS	YOUR RESPONSE TO SENIOR PROJECTS
1. Refer to Chapter 5, pages 95 - 96, and determine what is involved with a **senior project.**	
2. What are some of the advantages/benefits you would note for parents and students when this process is used?	
3. What are some of the disadvantages or barriers you would note for parents and students when this process is used?	
4. Would there be ways to work around the barriers to this process? How would you do that?	
5. What would be the main purpose for a teacher to utilize this assessment process?	
6. What would be your biggest question about the use of this assessment strategy? Would you ever consider having your students do a senior project?	

CHECKING FOR UNDERSTANDING

Directions:
List three key questions that are important to consider for each of the following topics.

1. Deciding what information needs to be recorded
2. Recording assessment information
3. Using rubrics
4. Using portfolios
5. Using student-led parent conferences
6. Building student responsibility for learning

Final Activity – Suggested time 1 hour

Personal Reflections on Classroom Assessment

Directions:
Choose **one** question from the *Reflecting on what has been learned* section in each chapter and respond in the reflection record on the following pages.

Overview

1. How do the needs of assessment information vary for the state, district, school, teacher, parent, and student?

2. What questions or insights do I now have about assessment that I have not previously thought about?

Chapter One

3. How does thinking of assessment as an on-going process in the classroom support and enhance state testing?

4. Give examples to illustrate how assessment as a process relates to different purposes for assessment.

Chapter Two

5. How does developing a conceptual road map or knowing very clearly what I'm responsible for teaching make me a more effective teacher?

6. What are the relationships among my *Standard Course of Study*, my pacing guide, my textbook, and other resources?

Chapter Three

7. How may using multiple assessment methods result in improved student learning and achievement?

8. What is one assessment strategy that I have not used frequently and that I might consider implementing?

Chapter Four

9. How confident am I that the assessments I am using in the classroom really measure what I want to measure? Explain.

10. How do the instructional decisions that I make about individual students or groups influence their achievement at the end of the year?

Chapter Five

11. How does the use of portfolios and student-led parent conferences promote greater student understanding of learning goals?

12. How does the use of rubrics and specific feedback to students promote greater student achievement?

Reflection Record

Question from Overview
Question from Chapter One
Question from Chapter Two

Reflection Record Continued

Question from Chapter Three
Question from Chapter Four
Question from Chapter Five

Feedback for Authors

Directions: Please respond to each item, fold and staple, and mail to the address on the back.

Name _____

School _____ LEA _____

Grade/Courses _____

Please circle to indicate your opinion:	Not useful				Extremely useful
1. Was the information in the manual useful?	1	2	3	4	5
2. How useful was this study guide in helping modify your classroom assessment practices?	1	2	3	4	5
3. How useful was having the video?	1	2	3	4	5
4. How useful was having a study partner or group?	1	2	3	4	5
5. How useful were the activities in helping you understand and learn the information?	1	2	3	4	5

What suggestions do you have for improving the text and/ or the study guide?

What follow-up materials or professional development would you find helpful?

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